Request for Qualifications (RFQ)
Materials Testing & Special Inspection
Rolesville Town Campus
Date Issued: October 29, 2026

ADDENDUM #1

Please see below clarifications in response to questions received in writing prior to the deadline posted in the RFQ.

1. You indicated that the contract will be awarded to one firm. Could this be a Team, composed of more than one firm?
   Response: The contract will be awarded to one prime firm. The selected prime firm may utilize subcontractors or team partners under separate agreements with the prime firm. The Town of Rolesville will contract directly with only one firm for the work.

2. If a subconsultant on a team decides to also pursue this solicitation as a Prime, is that allowed?
   Response: Yes. A firm may participate as a subconsultant on another respondent's team and also submit its own qualifications as a prime, provided that each respondent independently satisfies all requirements of the RFQ and there are no conflicts of interest or other restrictions applicable to the firms involved.

3. Who did the geotechnical investigations on this project? Will you share their report before this submission? Is that firm allowed to pursue this work or precluded?
   Response: The geotechnical investigation was performed by Southern Engineering and Testing, P.C. The geotechnical report is made available as part of this Addendum for use in preparing their qualifications and unit pricing.

4. Who is the Engineer of Record on this Project?
   Response: CLH Design is the Civil Engineer. Stewart is the Structural Engineer.

5. In your RFQ, Proposal Format, you have listed page limits for Items A through F as 9 pages plus resumes. Are we allowed to add any more pages or not? If yes, what is the total page limit (excluding resumes)?
   Response: Respondents should adhere to the individual page limits identified in the RFQ. The maximum for the sections with specified limits is 8 pages total, excluding resumes. The requested owner references may be provided in addition to those 8 pages.

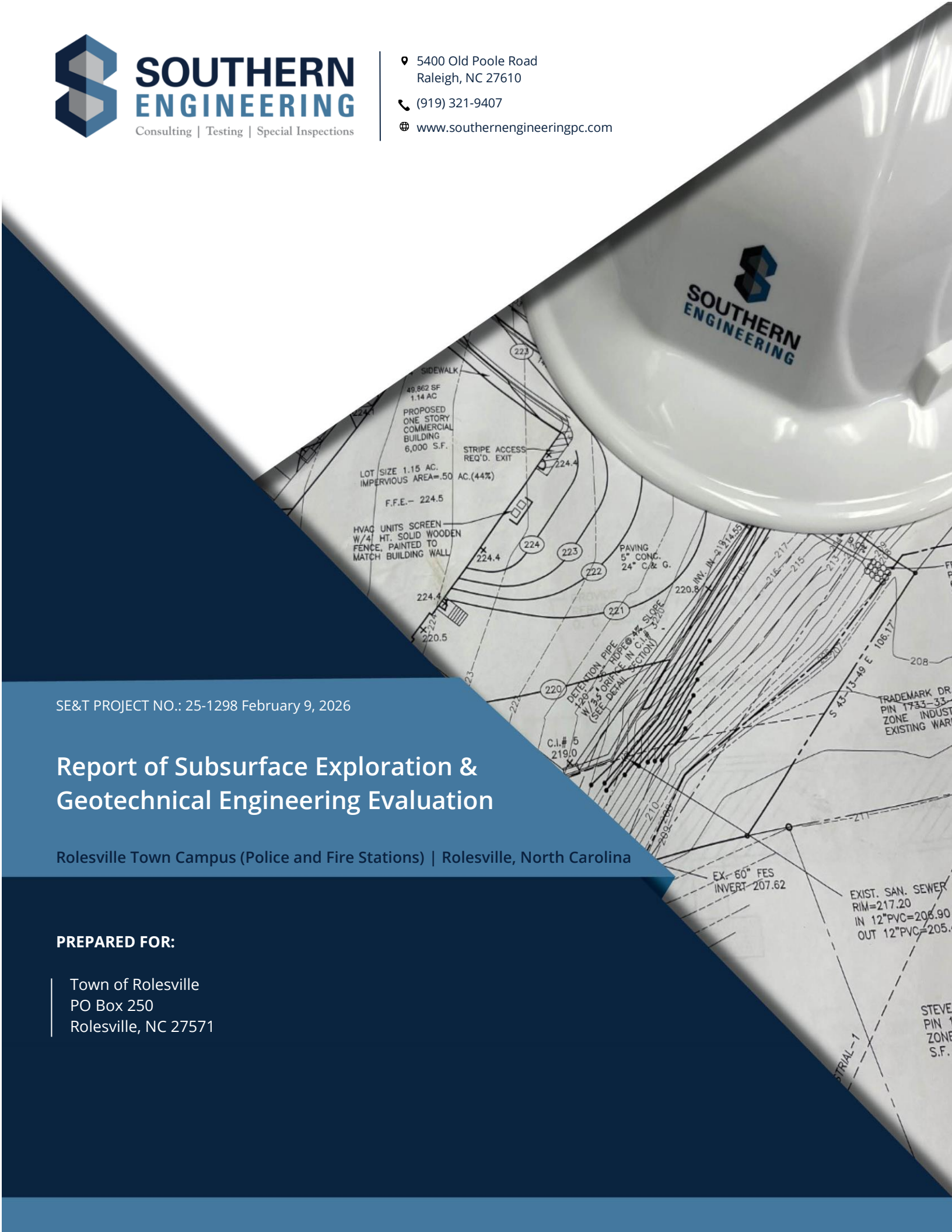
6. Is this QBS selection or unit price based?

Response: The selection is qualifications-based. The RFQ states that proposals will be evaluated on the firm's ability to meet the requirements, alignment of approach with Town needs, qualifications of project staff, and performance history/references. A full proposal for the contract will be determined after selection. Respondents are nevertheless required to provide unit-quantity pricing lists with their qualifications to demonstrate their understanding of the scope.

- END OF ADDENDUM #1 -

SOUTHERN ENGINEERING
Consulting | Testing | Special Inspections

5400 Old Poole Road
Raleigh, NC 27610
(919) 321-9407
www.southernengineeringpc.com



SE&T PROJECT NO.: 25-1298 February 9, 2026

Report of Subsurface Exploration & Geotechnical Engineering Evaluation

Rolesville Town Campus (Police and Fire Stations) | Rolesville, North Carolina

PREPARED FOR:

Town of Rolesville
PO Box 250
Rolesville, NC 27571

February 9, 2026

Town of Rolesville
PO Box 250
Rolesville, NC 27571

Report of Subsurface Exploration and Geotechnical Engineering Evaluation
Rolesville Town Campus (Police and Fire Stations)
E. Young Street
Rolesville, North Carolina
SE&T Project No.: 25-1298

Southern Engineering and Testing, P.C. (SE&T) has completed the geotechnical engineering evaluation for the project referenced above. This report describes the field exploration and presents the results of our engineering evaluation along with geotechnical related design and construction recommendations for this project.

Because of design and construction changes that occur on a project, questions often arise concerning subsurface conditions. We would be pleased to continue our role as the Geotechnical Engineer-of-Record (GEOR) during the project construction. We would also like to discuss being your construction materials testing (CMT) and/or Special Inspections (SI) provider during construction.

We appreciate the opportunity to work with you during the design phase of this project.

Sincerely,
SOUTHERN ENGINEERING AND TESTING, P.C.
NC License No. C-4167; SC Certificate of Authorization 5297



2/9/2026

Donald W. Brown Jr, PE
Vice President | Principal

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1 OBJECTIVE AND AUTHORIZATION

The primary objective of our services was to evaluate the subsurface conditions within the area of planned construction and to make recommendations regarding site development, including foundation design for the proposed police station and fire station. The scope for the geotechnical engineering services discussed in this report was outlined in SE&T Proposal No.: 25-31903 (REV02) dated October 27, 2025. Authorization was provided by way of the Town of Rolesville's Independent Contractor Service Agreement dated November 17, 2025.

Additional drilling was authorized during the course of our subsurface exploration. These add-services were approved by a change order dated January 7, 2026.

2 PROJECT UNDERSTANDING

To prepare this report, *SE&T* was provided with the following information:

- Rolesville Fire Station Schematic Design (Site Plan Test Fit with One Story Police) by ADW Architects, dated November 14, 2025
- Rolesville Town Campus Infrastructure Package by CLH Design, dated August 25, 2025
- Report of Subsurface Investigation and Geotechnical Engineering Evaluation by NV5 dated April 5, 2021
- Supplemental site plan illustrating three additional boring for small pedestrian bridges and two SHWT survey locations (received October 1, 2025)

The project consists of a new 14,885± sf one story police station with a future 4,035± sf one story addition area. The Town is also planning to build a 20,680± sf one story fire station that includes four apparatus bays. Both buildings will have concrete slabs-on-grade with finished floor elevations (FFE) of 427.5 feet (police) and 426.0 feet (fire). No basements are planned. The site is relatively flat so the finished floor elevations for the buildings will be close to the current grade and thus minimal grading. Roughly 2 to 3 feet of fill is expected in the Police building pad and roughly 2 to 4 feet of cut is expected in the Fire Station pad.

The police station will have light and heavy duty asphalt pavement in the parking lot. The fire station will utilize heavy duty concrete pavement for the apparatus bay apron and light duty asphalt for the parking lot. A stormwater pond is planned for the west end of the site. A multiuse trail will also be incorporated into the site design as a campus amenity. The trail will include three short pedestrian bridges to cross wetland areas; however, no loading conditions were available for the bridges at the time of this report.

3 SITE INFORMATION

3.1 Site Location and Description

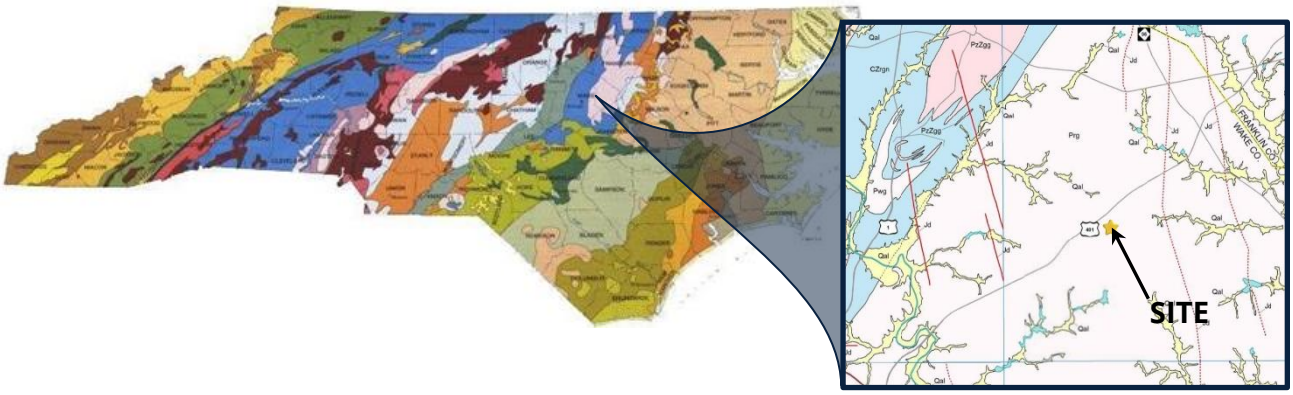
The property is located in the on the west side of E. Young Street, between Main Street and Highway 401 in Rolesville, North Carolina. Please see Figure A1 in Appendix A for a site vicinity map. The site is currently open, undeveloped land that was once used for crop farming. At the time of our fieldwork there were three dwellings and a detached garage that had been recently burned. There were also several small sheds still onsite. The land to the north and west is developed as single family neighborhoods. Farmland with a single family dwelling exists on the south side of the site.

The ground surface slopes downward to the south and west from the high ground along E. Young Street at the northeast corner of the site. According to the provided topographic data, there's approximately 25 feet of total relief across the site. There is roughly 2 to 3 feet of relief in the planned building pads.

Several rock outcrops were observed in the western portion of the site. Their locations were recorded during our time in the field and are illustrated in Figures A2 and A4 in Appendix A of this report. Photographs of the outcrops are presented in Appendix D (Photographs #3 and #4).

3.2 Local Geology

The project site is located at the northeastern edge of Wake County, which is within the Raleigh Belt of the Piedmont Geologic Province of the eastern United States. Review of the *Preliminary Bedrock Geologic Map of the Raleigh 30' x 60' Quadrangle, North Carolina (published in 2008 by Clark, Blake, Stoddard, P.A. Carpenter III, and R.H. Carpenter)* indicates that the subject site is primarily underlain by granite, granodiorite and monzogranite common to the Rolesville Granitoid unit (Prg). This Rolesville batholith is believed to have been created by a single pulse of magmatism approximately 298 million years ago.



The geologic map also illustrates a diabase (Jd), shown as a red dotted line, located in the general vicinity of the site. Although no diabase was encountered in the soil test borings, the mapped presence of such material nearby means that similar conditions could be encountered on the subject site during construction in unexplored areas or between the boring locations. Diabase in this area typically occurs in sills as well as dikes that can range from a few feet up to hundreds of feet wide. When encountered, diabase generally requires hoe-ramming to facilitate removal; however, if the diabase is massive, blasting or splitting may be required.

Based on our local experience, differential weathering of the parent bedrock has resulted in highly variable subsurface conditions. Both soil and rock conditions tend to vary considerably over relatively short horizontal and vertical distances. Furthermore, suspended boulders, discontinuous rock layers/lenses, rock pinnacles and/or zones of weathered and fractured rock are commonly encountered within the residual soils in this area.

4 FIELD AND LABORATORY SERVICES

4.1 Subsurface Exploration

4.1.1 Standard Penetration Test (SPT) Borings

The geotechnical exploration consisted of 39 Standard Penetration Test (SPT) borings, designated as B-1 through B-39, which were located and flagged in the field by SE&T using a Carlson BRx7 survey-grade GPS unit. Their coordinates and elevations are reported on the Boring Logs with accuracies of ±0.1 feet or better. The boring locations are illustrated by Figure A2 in Appendix A of this report.

The soil borings were advanced to approximate depths ranging from 8.5 feet to 40 feet by Bridger Drilling, Inc. from December 19th, 2025 to January 5th, 2026. Borings were performed with a track-mounted CME 45 drill rig using 2¼-inch hollow stem augers in general accordance with ASTM D6151. Sampling operations were conducted in general accordance with ASTM D1586. At predetermined intervals, soil samples were obtained with a split-barrel sampler (standard 2-inch O.D.). The sampler was rested on the bottom of the borehole and driven to a penetration of 18 inches (or fraction thereof) with blows of a 140-pound automatic drop hammer falling 30 inches. Of the 18 inches, the number of hammer blows required to achieve 6 inches of penetration is recorded for three consecutive segments. The sum of the blow counts for the second and third 6-inch segment is termed the SPT N-value. The N-values presented on the Boring Snapshots and Boring Logs are the actual, field-recorded blow counts and do not include correction factors for hammer energy or overburden soil pressures.

4.1.2 Dilatometer Testing (DMT)

To further evaluate the soil strength and deformation properties, dilatometer testing (DMT) was performed on February 5th, 2026 at two locations - sDMT-1 (beside boring B-8) and DMT-2 (beside boring B-23). DMTs were performed by In-situ Soil Testing, L.C. using a 15 mm thick, 96 mm wide, flat-blade dilatometer. The locations of these tests are illustrated on the Boring Location Diagram in Appendix A of this report. The blade was advanced to depths of 38 feet (sDMT-1) and 30.5 feet (DMT-2), stopping for testing at 20 cm intervals until refusal on very dense material was reached.

The dilatometer test is performed by inflating the 60 mm diameter stainless steel membrane, positioned near the center of the DMT blade, using nitrogen gas. Once the membrane mobilizes the soil that is pressing it against it, and the membrane separates from the blade body, the operator records that gas pressure ("A-pressure"). From that point, the operator continues to inflate the membrane until it travels another 1.0 mm, at which time a second gas pressure is recorded ("B-pressure"). These two pressures are then corrected for membrane stiffness to arrive at "P0" and "P1" values, which are used to derive the soil deformation moduli used in our geotechnical analyses. The DMT logs are included in Appendix B of this report.

4.1.3 Shear Wave Velocity (SWV) Testing

While onsite, shear wave velocity (SWV) testing was performed at sDMT-1. SWV data was recorded at approximately 1-meter intervals until probe refusal was reached. This testing uses two velocity seismometers housed in the probe's stem and ground surface vibrations created by hitting a steel strike plate with drop weight. The arrival times for the shear waves generated by the hammer strike are captured by the seismometers and recorded by a data logger connected laptop computer. This data is used to determine the velocity at which shear waves travel through the subgrade soils and allows for a more representative seismic site classification than SPT N-values. The SWV profile is included in Appendix B of this report. Velocities for the materials below the probe refusal depth were assumed (extrapolated) to a total depth of 100 feet as illustrated by the dotted line on the plotted profile.

4.2 Laboratory Services

The soil samples obtained during the drilling operations were placed in labeled containers and delivered to our Raleigh laboratory where they were visually-manually classified in general accordance with ASTM D2488 and logged by a member of Southern Engineering's geotechnical engineering staff. Typed boring logs are included in Appendix B of this report.

Geotechnical laboratory testing was performed on several soil samples to establish pertinent engineering properties for use in our evaluation. This included Atterberg Limits testing, particle size distribution testing, and moisture content testing. The test results can be found

in Appendix C of this report. All untested soil samples will be stored for two months after drilling before discarding.

5 SUBSURFACE CONDITIONS

The following is a subsurface description of a generalized nature, provided to highlight the major soil strata encountered. The stratification of the subsurface materials illustrated on the Boring Logs and Boring Snapshots represent the conditions at the actual test locations; therefore, variations should be expected between borings. Stratigraphy boundaries only represent the approximate depth/elevation of a noticed material change but the transition between material types is typically gradual. The soil types referenced herein are based on the Unified Soil Classification System (USCS).

5.1 Topsoil/Cultivated Soil

Most of the property evaluated during this assessment was once used for agricultural purposes (i.e. farm fields). Cultivating soils year after year results in an elevated organic content to deeper than normal depths due to repeated plowing, discing, etc., often to 18 to 36 inches below the ground surface. Based on the borings, the upper 12 to 36 inches of the soil profile are cultivated in the fields, with the upper 12± inches generally containing elevated organic content. The upper 3 to 8 inches contained the highest concentration of organic matter (i.e., topsoil).

The cultivated soil stratum primarily consists of soft to stiff elastic SILT (MH) with lesser amounts of loose to medium dense Clayey SAND (SC).

Borings B-4 and B-21 were performed in a gravel driveway and encountered approximately 4 inches and 10 inches of graded gravel, respectively.

5.2 Fill Soil

Borings B-3 and B-4 encountered soil that appeared to be old fill that was presumably placed during previous grading activities for the area of the former house. The fill extended to approximately 5.5 feet and 3 feet below the current grade, respectively, and consisted of medium dense Silty SAND (SM), medium stiff Sandy SILT (ML) and elastic SILT (MH).

5.3 Alluvium

Alluvium is water deposited soil (sediment) that was transported by water to its current locations. Alluvial soil is commonly encountered in low lying areas near creeks, streams, river, and other drainage features and are typically poorly consolidated due to the nature of their deposition.

Alluvial soil consisting of very loose Clayey SAND (SC) was encountered in borings B-36 and B-37 extending to depths of approximately 5.5 feet and 3 feet below the current grade, respectively. Trace organics were noted in the alluvium, which is common.

5.4 Piedmont Residuum

Residual soil, which is the undisturbed, fully weathered remains of the parent bedrock, was encountered immediately below the fill in boring B-4, immediately below the gravel in boring B-21, immediately below the topsoil layer borings B-2, B-3, B-9, B-22 through B-25, and B-28, and below the cultivated soil in the remaining borings. The residuum consisted of medium stiff to very stiff elastic SILT (MH), very soft to very stiff Sandy SILT (ML), and very loose to dense Silty SAND (SM). Lesser amounts of loose Clayey SAND (SC) and medium stiff lean CLAY (CL) were also encountered onsite.

5.5 Partially Weathered Rock

For engineering purposes, partially weathered rock (PWR) is defined by SPT N-values of 100 bpf, or more commonly 50 blows with 6 inches or less penetration. Partially weathered rock is an intermediate geomaterial (IGM) that is structurally between the parent rock and soil. PWR was encountered in six borings as shown in the table below. The PWR was classified as granite and sampled as Silty SAND (SM).

Table 1: PWR Depths and Elevations

Boring ID	PWR Depth, ft	PWR El., ft
B-22	31	395.8
B-26	9.5	417.8
B-27	19.5	407.9
B-29	12	416.3
B-31	5.5	419.5
B-33	9	414.7

5.6 Rock

Auger refusal on was encountered in three borings as presented in Table 2. Auger refusal is a term that describes subsurface materials with sufficient density or hardness to prevent auger penetration of geotechnical drilling equipment and is usually considered indicative of rock. Rock core sampling of the refusal materials for assessment of consistency and composition was beyond the scope of services for this project.

Table 2: Rock Depths and Elevations

Boring ID	Rock Depth, ft	Rock El., ft
B-25	36.5	361.9
B-26	11	416.3
B-37	12	398.8

Several rock outcrops were observed in the western portion of the site. Their locations were recorded during our time in the field and are illustrated in Figures A2 and A4 in Appendix A of this report. Photographs of the outcrops are presented in Appendix D (Photographs #3 and #4).

5.7 Groundwater

Borings were checked for groundwater immediately after drilling. Many holes were allowed to remain open until the next day and rechecked for groundwater. Groundwater was encountered in 20 borings at the depths presented in Table 3.

Table 3: Groundwater Depths and Elevations

Boring ID	0-Hr GW Depth, ft	0-Hr GW El., ft	Delayed GW Depth, ft	Delayed GW El., ft
B- 1	19.7	404.7	FIAD	---
B- 2	15.9	408	17.1	406.8
B- 3	13.3	410.1	FIAD	---
B- 4	13.8	410.8	FIAD	---
B- 5	10	414.5	FIAD	---
B- 6	9.1	415	FIAD	---
B- 7	11.4	411.7	10.2	412.9
B- 8	12.3	411.2	10.4	413.1
B- 9	11.8	412.7	11.4	413.1
B-10	11.4	413.1	FIAD	---
B-22	None	---	16.2	410.6
B-23	16.3	413	16.2	413.1
B-24	13.5	413.8	FIAD	---
B-25	10.8	417.6	16.2	412.2

Table 3: Groundwater Depths and Elevations (Cont'd)

Boring ID	0-Hr GW Depth, ft	0-Hr GW El., ft	Delayed GW Depth, ft	Delayed GW El., ft
B-27	None	---	13.8	413.6
B-28	14.2	414.3	FIAD	---
B-35	7.3	413	6.9	413.4
B-36	8.2	403.1	3.8	407.5
B-37	4.1	406.7	4	406.8
B-38	None	---	6.1	409.5

0-Hr = Immediately after drilling (after auger removal)
Delayed = Next day
FIAD = Filled Immediately After Drilling

The groundwater depths noted above represent the conditions at the time of the exploration. Fluctuations in groundwater levels are common and should be expected. Common factors that influence groundwater levels include, but are not limited to, soil stratification, climate/weather, nearby bodies of water (lakes, ponds, etc.), tidal fluctuation, underground springs, rivers, and surface water discharge. At the onset, as well as continually throughout the construction process, the contractor should monitor groundwater levels if determined to be detrimental to the project.

Seasonal high water table (SHWT) surveys were performed beside two soil borings two locations (B-38 and B-39) within the proposed pond. The surveys were performed by Piedmont Environmental Associates, P.A. and identified redoximorphic features indictive of past groundwater starting at depths of 2.5 feet and 3 feet below the current grades, respectively. Piedmont's report is included in Appendix E of this report.

6 ENGINEERING ASSESSMENT AND RECOMMENDATIONS

6.1 Site Grading

6.1.1 Subgrade Preparation

All vegetation, topsoil, root mat, and any other unsatisfactory or deleterious materials should be removed from the limits of structural areas. Stripping should also include the upper portion of the cultivated stratum, which tends to be elevated in organic material. We recommend budgeting for the removal of an average of 12 inches of cultivated soil in the farm fields and 6 inches of topsoil in the areas surrounding the old houses. All such materials will be unsuitable for reuse as structural fill and will need to be bermed onsite, exported, or stockpiled for later topdressing applications.

Old foundations, underground utilities, and septic systems (tanks and leach fields) should also be removed. If active/open water wells remain onsite, they should be abandoned according to North Carolina regulations before the start of construction. Although not encountered in any of the borings, it's prudent to note that buried debris and burn pits are not uncommon on large farms such as this. If encountered in structural areas of the site, such features will require also removal/undercutting.

After stripping the site, the exposed subgrade should be thoroughly densified with a large, vibratory roller in areas that will receive new fill to raise the grade or are already at-grade. Following densification, these areas should be proofrolled with a tandem-axle dump truck weighing between 15 and 20 tons. Proofrolling should occur in the presence of SE&T so that recommendations can be provided for areas that rut, pump, or deflect excessively. Proofrolling should not be performed on frozen or excessively wet subgrades.

The surficial fine-grained soil at this site will be sensitive to water. As such, proper site drainage should be maintained during earthwork operations to reduce the potential for wet weathered delays. Common approaches to reduce such delays include grading the area so that surface water flows away from the excavation, sealing exposed soil surface with a smooth-drum roller prior to precipitation events, and forming temporary ditches, swales, berms, or other surface water diversion features. We also recommend limiting construction traffic during and immediately after wet weather.

Chemical treatment of subgrade soils using cement to improve their strength and performance are discussed for pavements in Section 6.5 of this report. The same approach can be used in any structural area (e.g., building pads, staging areas, haul roads, construction entrances, etc.) that would benefit from increased strength and the associated reduction in damage caused by frequent heavy construction traffic, especially following wet weather.

6.1.2 Structural Fill

6.1.2.1 Selection

Whether imported or borrowed from an onsite source, structural fill material should satisfy the following:

- No excessive deleterious material.
- Organic content no greater than 3% (by weight).
- No rocks or other solid inclusions greater than 3 inches in diameter.
- Maximum Dry Density (MDD) of 95 pounds per cubic foot (pcf) or greater, as determined by the Standard Proctor Compaction Test (ASTM D698).
- Liquid Limit (LL) of 50 or less and a Plasticity Index (PI) of 25 or less, as determined by Atterberg Limit testing (ASTM D4318), unless otherwise noted/allowed.

The onsite ML and SM soils will meet these criteria and are suitable for reuse as structural fill if free of excessive organic material or other debris; however, the availability of SM materials will be limited. The elastic SILT (MH) commonly encountered at the surface should not be reused as structural fill in building pads nor within 18 inches of the finished grade in pavement areas.

6.1.2.2 Moisture Conditioning

The water content of structural fill should be maintained within -3% to +3% of the material's optimum water content as determined by the Standard Proctor Compaction Test (ASTM D698). Judging by the soils encountered in the borings cut/excavated material is expected to be wet of optimum and require drying, especially during the wet season. We also expect that the amount of drying needed will increase with depth, particularly of soils excavated near the water table. Spreading and windrowing are common ways that soils are dried, particularly when there is ample room to do so. Lime treatment is also a viable option for lowering water content in soils.

Please note that soil can be deemed unusable due to water content but shall not be classified as unsuitable based solely on water content. When soil water content falls outside of the requirements set herein, the contractor shall be responsible for taking appropriate measures (drying or wetting) to render the soil usable.

6.1.2.3 Compaction

When using large, ride-on compactors, fill should be placed in loose lifts measuring 8 to 10-inch thick. Lift thicknesses should be thinned to 4 to 6 inches when using smaller, Rammax-type compactors and no more than 4 inches thick for sled and jumping-jack tampers. Structural fill should be compacted to the requirements below, which are based on the soil's maximum dry density as determined by ASTM D698:

- Within 12 inches of finished subgrade elevation..... 98%
- Below 12 inches of finished subgrade elevation 95%

Field compaction testing should be performed in accordance with ASTM D1556 (Sand Cone Method), ASTM D2937 (Drive Cylinder Method), or ASTM D6938/D8167 (Nuclear Methods). It is recommended that the placement and compaction of structural fill material be monitored by SE&T.

The following compaction test frequencies are recommended as minimums:

- One test per 2,000 square feet for each lift placed in the building pad.
- One test per 5,000 square feet for each lift placed in the parking lot and driveways.
- One test per lift for every 75 linear feet of utility trench.

6.2 Building Foundations

6.2.1 Design

We have based our assessment on the following loads, which were provided by the project's structural engineer (Stewart Engineering):

Police Station (1-story):

- Columns – 70 kips max
- Walls – 3.5 kips per linear foot max

Fire Station (1-story, with tall-walled Apparatus bays and mezzanine (2nd story)):

- Columns – 70 kips max. (1-story area)
- Walls – 3.5 kips per linear foot max. (1-story area)
- Columns – 190 kips max. (2-story area)
- Walls – 6.5 kips per linear foot max. (2-story area)

Using these loads, the subsurface conditions encountered in the borings and DMTs, and the site preparation recommendations provided in this report, we recommend the use of conventional spread footings to support both buildings. In designing the foundations, we recommend the design parameters provided in Table 4.

Table 4: Spread Footing Design Parameters

Parameter	Value
Net Allowable Soil Bearing Capacity, psf Police Station Fire Station	 2,500 3,000
Minimum Bearing Depth[1], in.	18
Minimum Column Footing Width, in.	36
Minimum Wall Footing Width, in.	18
Estimated Post-Construction Settlement, in. Total Settlement, in. Differential Settlement, in.	 1 or less ½ or less
Moist Soil Weight, pcf	120
Passive Earth Pressure Coefficient (Kp)[2]	3.00
Ultimate Friction Factor (tan δ)	0.34

1. *Below the lowest adjacent grade.*
2. *We recommend that a safety factor of at least 1.5 be used to determine the allowable passive resistance and the soil's allowable friction.*

6.2.2 Construction

It is preferable for spread footing excavations in soil to be performed using a bucket with a flat cutting edge (no teeth) to reduce disturbance of the exposed bearing soil. Regardless, footing bottoms in soil should be tamped with a jumping-jack or sled compactor prior to the foundation inspection and placement of reinforcing steel. Footing bottoms should be clean of loose material and debris and protected from disturbance.

Foundation bearing materials should be checked by SE&T during construction to verify satisfactory bearing conditions (i.e., materials and strength). This should entail a qualitative assessment consisting of probing throughout the foundation excavations using a ½-inch diameter, T-handled probe rod. Probing should be supplemented by strategically placed hand auger borings and Dynamic Cone Penetrometer (DCP) testing for quantitative evaluation. DCP tests should be performed in accordance with ASTM STP-399 prior to placing reinforcing steel or concrete. Unsuitable soil detected during this evaluation should be addressed as recommended by SE&T.

After footings are approved, they should be protected from surface water run-off and freezing. If water is allowed to accumulate within a footing excavation and soften the bearing soils, or if the bearing soils are allowed to freeze, the deficient soils should be removed from the excavation and rechecked by SE&T prior to concrete placement. When concrete cannot be placed immediately, we recommend placing a mud-mat to protect the bearing soil.

6.3 Slab-On-Grade

6.3.1 Design

In designing the slab-on-grade floor, we recommend a minimum 4-inch base layer of washed No. 57 stone to provide uniform support and to provide a capillary break. We also recommend the installation of a vapor barrier as a measure of protection against water vapor intrusion. Omitting the vapor barrier could lead to water vapor transmission through the slab and cause damage to flooring and/or elevated moisture levels within the structure. We recommend considering the use of a vapor barrier meeting ASTM E1745, which should be installed per the ACI guidelines (ACI 302.2R) and ASTM E1643.

The design of the concrete slab-on-grade should be based on Westergaard's modulus of subgrade reaction (k). Based on the soil conditions encountered near the surface at the site, and the stone layer recommended above, we recommend using an effective value (k_{ef}) of 110 pci for slab design.

It is important to point out that concrete cracking is normal and should be expected. Proper jointing of slabs is paramount in the control of cracking. The American Concrete Institute (ACI) recommends a maximum panel size (in feet) equal to approximately three times the thickness of the slab (in inches) in both directions. Controlling the water-cement ratio of the concrete, particularly after batching, and including fiber reinforcement in the mix can also help reduce shrinkage cracking.

6.3.2 Construction

Slab support soils should be evaluated by SE&T to identify any weak or unstable areas that require repair prior to placement of the stone base. This usually entails proofrolling supplemented by probing and/or DCP testing as necessary.

6.4 Seismic Design Considerations

Per the 2018 N.C. Building Code, the design of a structure must consider dynamic forces resulting from seismic events, regardless of their likelihood of occurrence. As part of a generalized procedure to estimate seismic forces, the code assigns a Seismic Site Classification (letter designation of Class A through F) based on the subgrade soil/rock conditions within the upper 100 feet of the ground surface at the subject site. Based on the SPT N-values and shear wave velocities recorded in sDMT-1, we recommend the following:

- Police Station — Seismic Site Class D
- Fire Station — Seismic Site Class D

The following bullet items briefly discuss our qualitative assessments of the other seismic-related issues. Detailed quantitative analyses for these items were not included in our Scope of Work and are not considered necessary at this time given the development plans and the subsurface conditions encountered.

- Liquefaction – Risk level is low - The soils encountered were of sufficient fines content and/or density to render them not readily liquefiable during the design earthquake.
- Slope Stability – Risk level is low - Based on the grading plan, neither tall nor overly steep cut/fill slopes are planned for construction.
- Surface Rupture – Risk is low – No known active faults underlie the site.

6.5 Pavement

6.5.1 Design

The proposed collector road extending through the Town Campus will receive the highest amount of traffic, including significant increases when the Scarboro Village Connector is tied in and when the community center, town hall, and library are added in future phases. According to the current drawings, the collector road will include curb and gutter; therefore, our roadway recommendations are based on typical NCDOT curb and gutter design standards. We were also informed that the collector road is expected support 3,200 vehicles per day. The recommended asphalt pavement sections for the collector road are presented in Table 5.

Table 5: Recommended Minimum Asphalt Pavement Sections for the Proposed Collector Road

Course	Layer Thickness, in.
ABC Stone Option	
Surface (S9.5C)	3*
Intermediate (I19.0C)	4
Aggregate Base (ABC)	6
Full Depth Asphalt Option	
Surface (S9.5C)	3*
Intermediate (I19.0C)	4
Base (B25.0C)	4
Notes: **Two lifts of surface mix required* *Design based on Load Level C and assumed Dual = 2% and TTST = 2%. No growth.*	

The Police Station parking lot will be paved using asphalt. No traffic information was provided for this facility, so we have assumed traffic to consist of 200 cars per day, two garbage trucks per week, and two delivery vehicles per day. Based on this loading, the onsite soil conditions, and the site preparation recommendations herein, we recommend the pavement sections shown in Table 6 for the proposed Police Station.

Table 6: Recommended Minimum Asphalt Pavement Section for the Police Station

Course	Layer Thickness, in.
Light Duty – Stalls	
Surface (S9.5B or C)	2
Aggregate Base (ABC)	6
Heavy Duty – Drive Aisles	
Surface (S9.5B or C)	3*
Aggregate Base (ABC)	8
**Two lifts of surface mix required*	

Fire Station parking lot will utilize concrete pavement. The apron for the apparatus will also be constructed with concrete. Based on the information provided, we've designed for 10 apparatus trips per day in their circulation area. For the parking lot, we've designed for 100 cars per day, two garbage trucks per week, and two delivery vehicles per day. Based on this loading, the onsite soil conditions, and the site preparation recommendations herein, we recommend the pavement sections shown in Table 7 for the proposed Fire Station.

Table 7: Recommended Minimum Concrete Pavement Section for the Fire Station

Course	Layer Thickness, in.
Light Duty – Parking Lot*	
Concrete**	5
Aggregate Base (ABC)	4
Heavy Duty – Apparatus Circulation	
Concrete**	8
Aggregate Base (ABC)	4
**If asphalt is used for the portion of the parking lot not subjected to apparatus traffic, the sections provided in Table 6 may be used.* ***NCDOT pavement mix with compressive strength of 4,500 psi and flexural strength of 650 psi*	

The flexible pavement designs herein are based on an estimated (untreated) CBR value of 4, the standard 20-year design life (30-year for concrete), and NCDOT/AASHTO design methodology. All materials and workmanship used during construction should conform to the North Carolina Department of Transportation Standard Specifications for Roads and Structures, current edition.

We request that our traffic assumptions be reviewed by the project's civil engineer for concurrence. If the actual anticipated traffic loadings vary from what we have assumed, revisions to the recommended pavement sections may be needed.

If widening and/or turn lanes are planned for E. Young Street, they should conform to NCDOT standards.

6.5.2 Construction

The pavement recommendations herein are predicated by the assumption that the subgrade soils have been properly moisture conditioned and compacted to a uniform and stable condition. Experience has shown that most pavement failures are caused by localized soft spots in the subgrade or inadequate drainage.

We recommend proofrolling finished subgrades, as well as the subsequently placed stone base, with a tandem-axle dump truck weighing between 25 and 35 tons. Proofrolling should occur in the presence of Southern Engineering so that recommendations can be provided for areas that rut, pump, or deflect excessively. Proofrolling observed by an experienced engineer or soil technician will reduce the likelihood of isolated weak spots in the subgrade. Proofrolling should not be performed on frozen or excessively wet subgrades. If subgrades are exposed to precipitation or freezing temperatures prior to paving, the area should be re-proofrolled to verify its condition.

Aggregate base course stone should be compacted to at least 98 percent of its maximum dry density as determined by AASHTO T-180 (modified Proctor). Asphalt shall be placed with appropriate lift thicknesses and achieve the proper compaction for the mix(es) used, as specified in the latest edition of the NCDOT QMS for Asphalt Pavements.

As previously noted, most of the near surface soil at this site consists of elastic SILT (MH) which is poorly suited for pavement support. While the pavement sections provided in this report account for the MH soil, their presence will likely result in increased maintenance, beginning earlier in the pavement's life cycle than if it were supported by a more suitable soil. We recommend considering cement stabilization to reduce the potential for premature maintenance related to the highly elastic subgrade soils, particularly for the planned collector and connector roads. Cement stabilization will also result in a reduced pavement section.

Stabilization/treatment would involve mixing cement (and water) into the subgrade to a depth of 10 inches after the finished subgrade elevation is set. After the curing period, which is typically five to seven days, the asphalt/concrete can be placed directly on the treated subgrade (i.e., the stone bases noted in Table 5, 6, and 7 can be omitted). For bidding purposes, we suggest budgeting this treatment for 45 pounds of cement per square yard; however, the final dosage should be determined by the treatment contractor at the onset of these activities. Also note that cement treatment will create a hard upper layer of material that may be difficult to excavate in a neat fashion. As such, the timing and location of utility installations should be taken into consideration when evaluating the use of cement stabilization.

6.5.3 Maintenance

Preventative maintenance should be planned and provided through an ongoing pavement management program to enhance future pavement performance. Preventative maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Preventative maintenance, which consists of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing), is usually the top priority when implementing a planned pavement maintenance program and provides the highest return on investment for pavements.

The pavement sections provided herein do not account for construction traffic (dump trucks, concrete trucks, Lulls, etc.), which is typically very heavy. If construction traffic is allowed to operate on paved surfaces, damage and/or a shortened service life should be expected. Considering this, we suggest that paving operations be scheduled for the end of construction when heavy construction traffic will be less.

7 LIMITATIONS OF THE REPORT

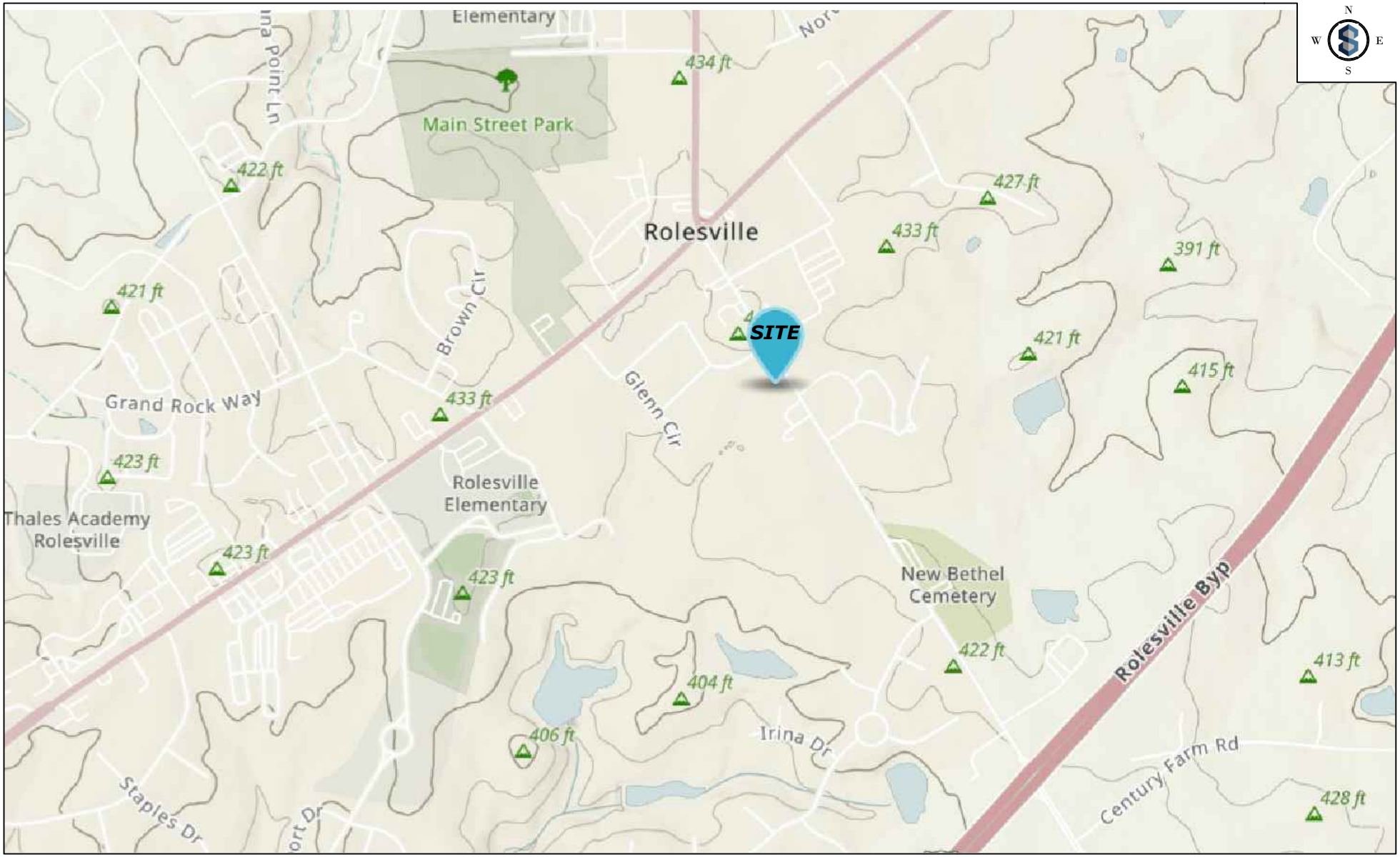
The information and recommendations herein are provided to assist the Architect and Engineers in designing this project. If there are any changes in the intent, design, building location, or construction methodology then the recommendations contained in this report shall not be considered invalid until reviewed by Southern Engineering and Testing. If deemed appropriate, we will confirm or modify our recommendations accordingly.

There is a possibility that variations in soil conditions may be encountered during construction. This is not uncommon in this geologic region, even over short distances. During construction, proper evaluation of soil conditions and correlation to the data herein will be critical to building performance, particularly foundations. Since Southern Engineering performed the geotechnical evaluation for this project, we possess firsthand knowledge of the subsurface conditions at this site; therefore, it is recommended that this firm be retained to provide continued testing and observation services during construction. We assume no responsibility for construction compliance with the project's specifications, and/or plans, unless we have been contracted to provide the appropriate services throughout the course of construction.

Please refer to advisory bulletin document in Appendix F, which was prepared by the Geoprofessional Business Association (GBA) to help you better interpret and apply this report to the project. The scope of this study does not include an environmental assessment nor testing and sampling the soil, water, or air for the presence of hazardous materials.

APPENDIX A

SITE VICINITY MAP
BORING LOCATION DIAGRAM



SOUTHERN ENGINEERING
5400 Old Poole Road, Raleigh, NC 27610
Firm License #s: C-4167 (NC), 5297 (SC)
www.southernengineeringpc.com

SITE VICINITY MAP
ROLESVILLE TOWN CAMPUS
E. Young St
Rolesville, NC

Project No.:	25-1298
Scale:	NTS
Prepared by:	DB
Date:	Feb, 2026

Figure No.:
A1

Note: Drawing adapted from information provided to SE&T. All test locations are approximate (unless otherwise noted) and intended for illustration purposes only.



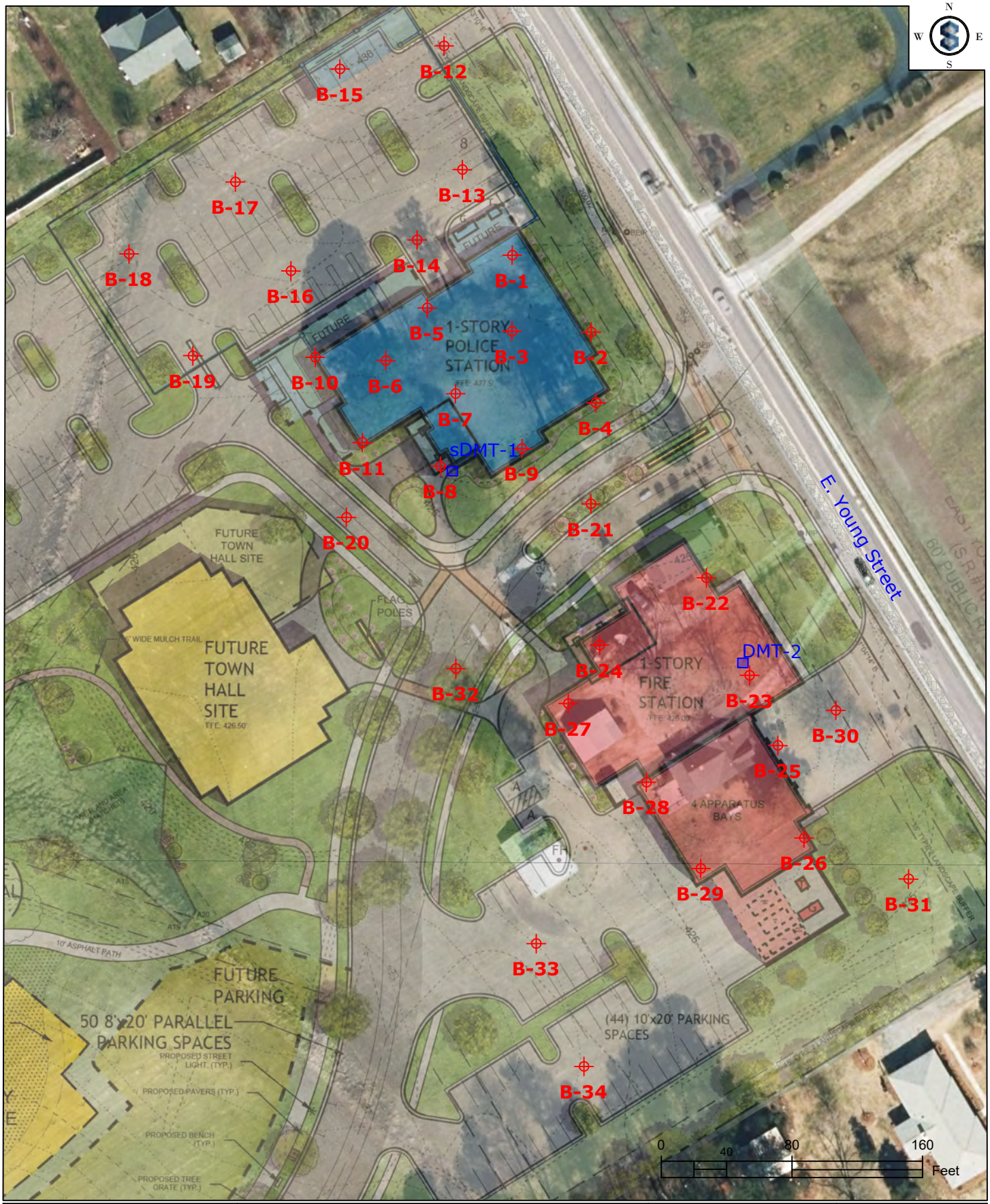
SOUTHERN ENGINEERING
5400 Old Poole Road, Raleigh, NC 27610
Firm License #s: C-4167 (NC), 5297 (SC)
www.southernengineeringpc.com

BORING LOCATION DIAGRAM
ROLESVILLE TOWN CAMPUS - OVERALL
E. Young St
Rolesville, NC

Project No.:	25-1298
Scale:	1 in = 200 ft
Prepared by:	DB
Date:	Feb. 2026

Figure No.: A2

Note: Drawing adapted from information provided to SE&T. All test locations are approximate (unless otherwise noted) and intended for illustration purposes only.



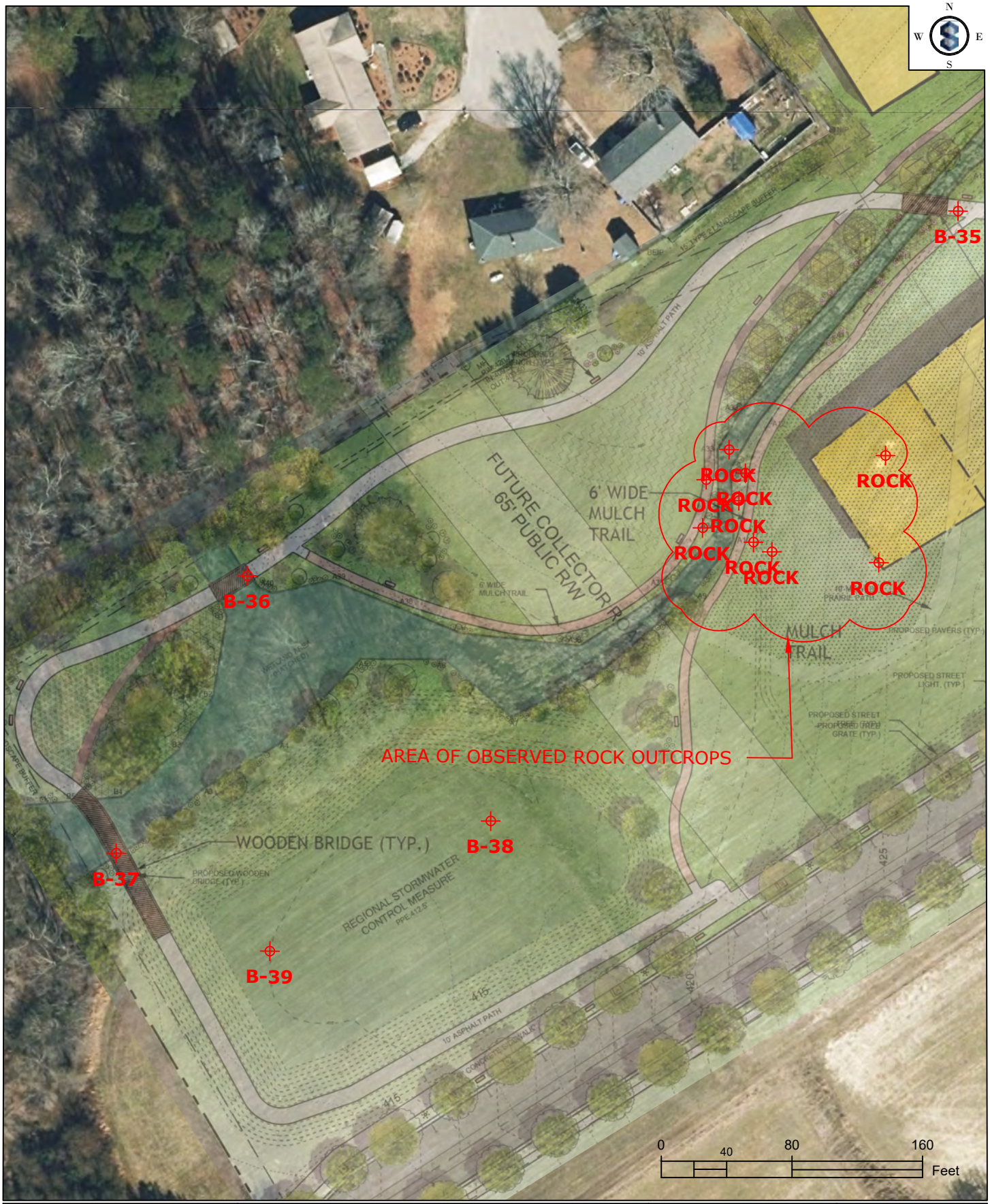
SOUTHERN ENGINEERING
5400 OLD POOLE RD, RALEIGH, NC 27610
Firm License #s: C-4167 (NC), 5297 (SC)
www.southernengineeringpc.com

BORING LOCATION DIAGRAM
ROLESVILLE TOWN CAMPUS - EAST
E. Young St.
Rolesville, NC

Project No:	25-1298
Scale:	1 in = 80 ft
Prepared By:	DB
Date:	Feb 2026

Figure No.:
A3

Note: Drawing adapted from information provided to SE&T. All test locations are approximate (unless otherwise noted) and intended for illustration purposes only.



SOUTHERN ENGINEERING

5400 OLD POOLE RD, RALEIGH, NC 27610
Firm License #s: C-4167 (NC), 5297 (SC)
www.southernengineeringpc.com

BORING LOCATION DIAGRAM
ROLESVILLE TOWN CAMPUS - WEST
E. Young St.
Rolesville, NC

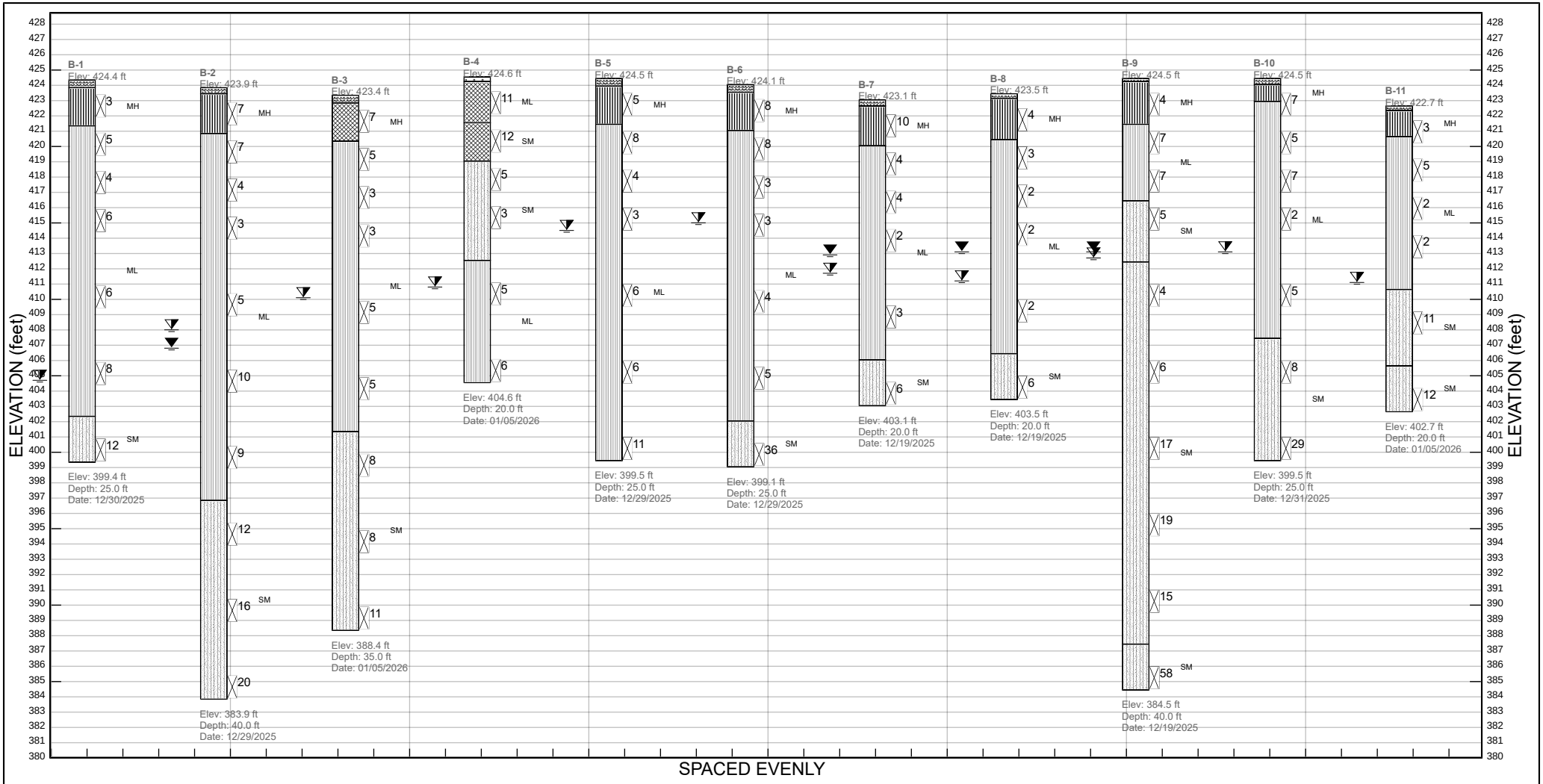
Project No:	25-1298
Scale:	1 in = 80 ft
Prepared By:	DB
Date:	Feb. 2026

Figure No.:
A4

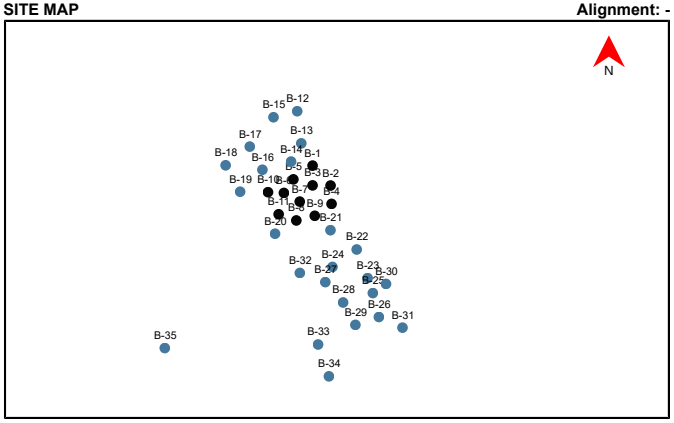
Note: Drawing adapted from information provided to SE&T. All test locations are approximate (unless otherwise noted) and intended for illustration purposes only.

APPENDIX B

BORING SNAPSHOTS
BORING LOGS
LEGEND TO SOIL DESCRIPTIONS
DMT LOGS
SWV PROFILE



SITE MAP **Alignment: -**

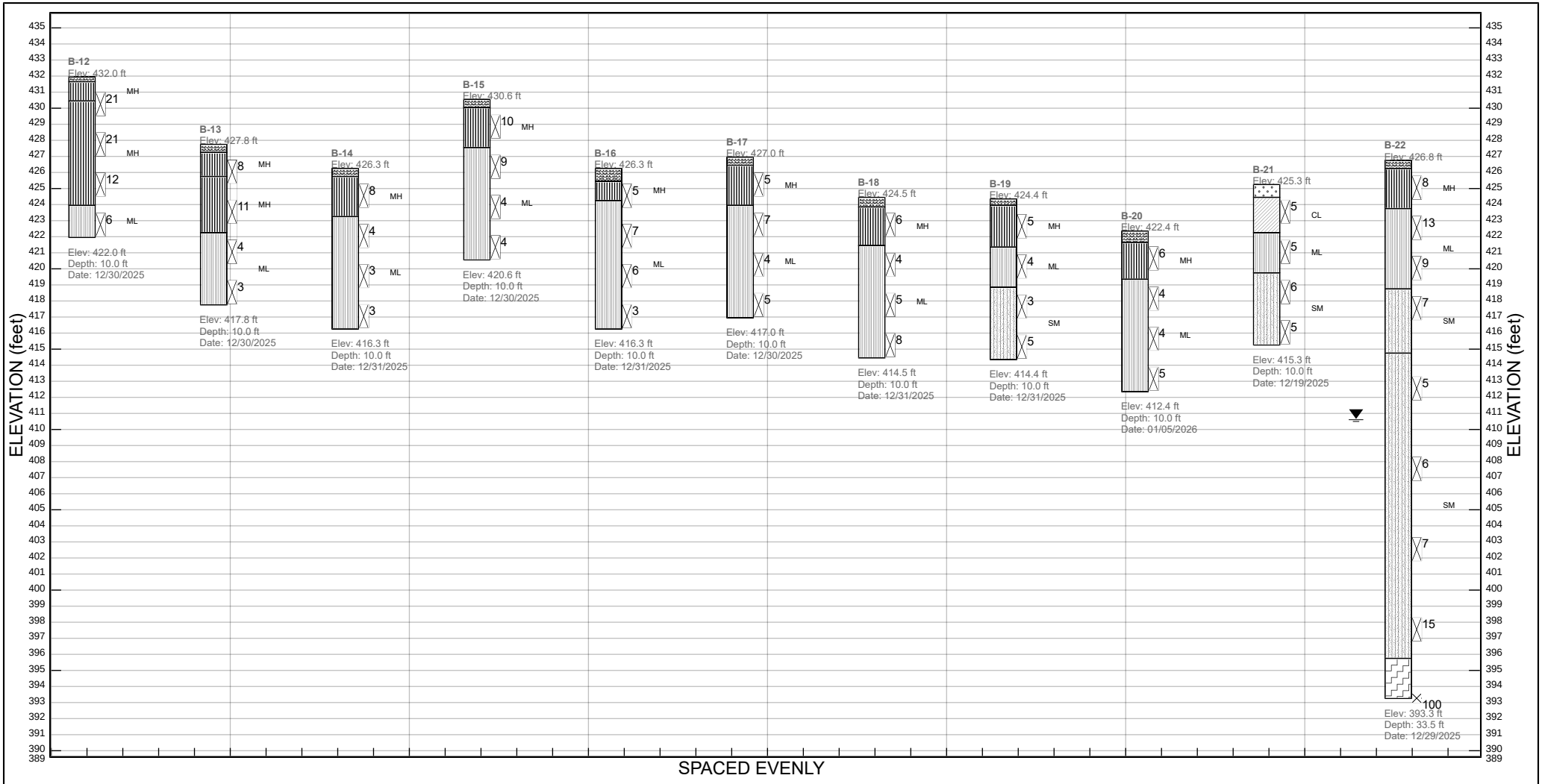


Rolesville Town Campus
Rolesville, NC

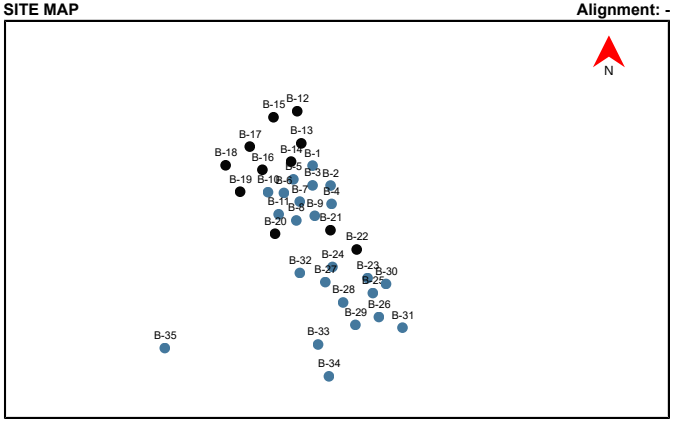
25-1298

BORING SNAPSHOT

SOUTHERN ENGINEERING



SITE MAP **Alignment: -**

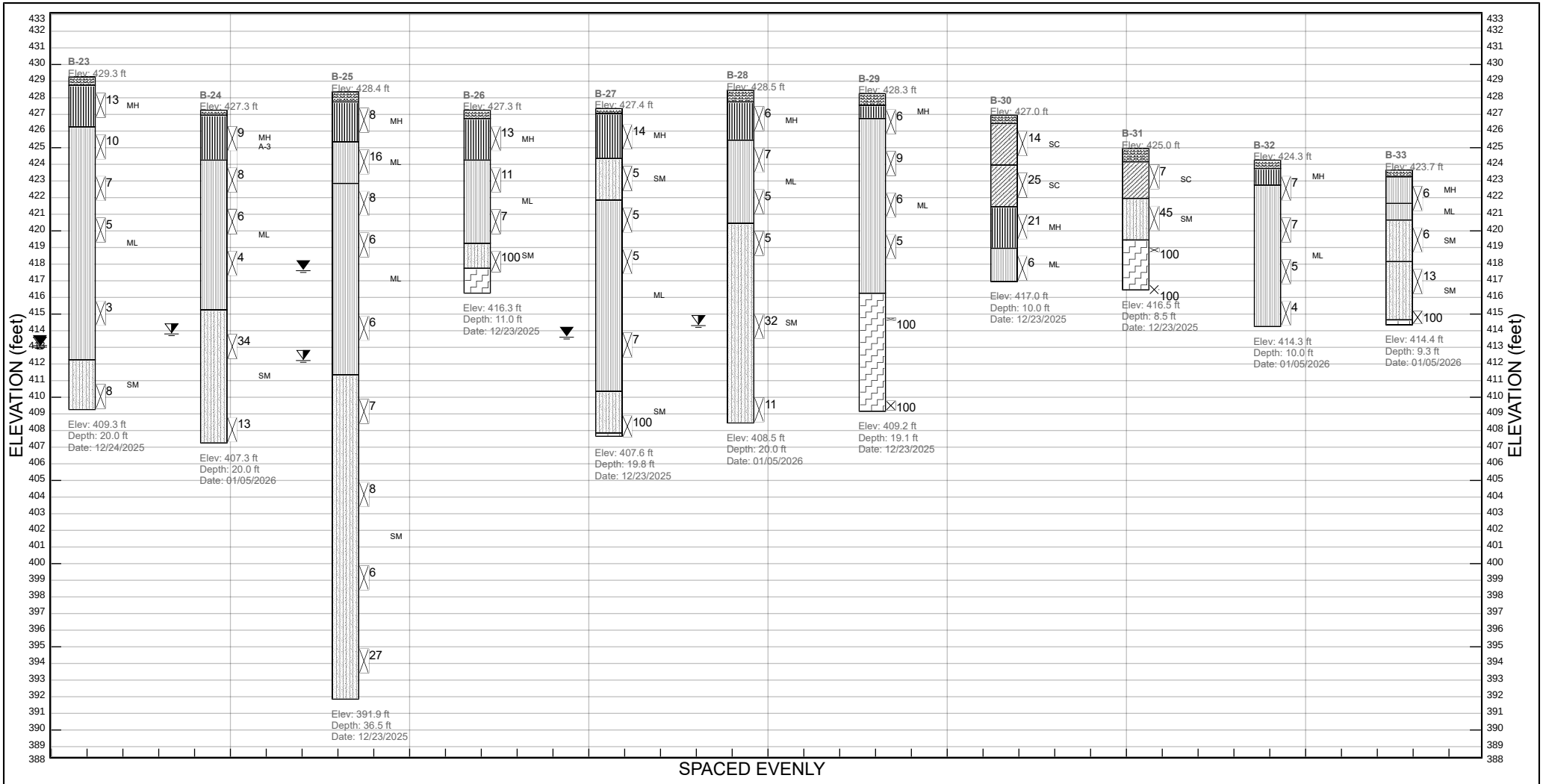


Rolesville Town Campus
Rolesville, NC

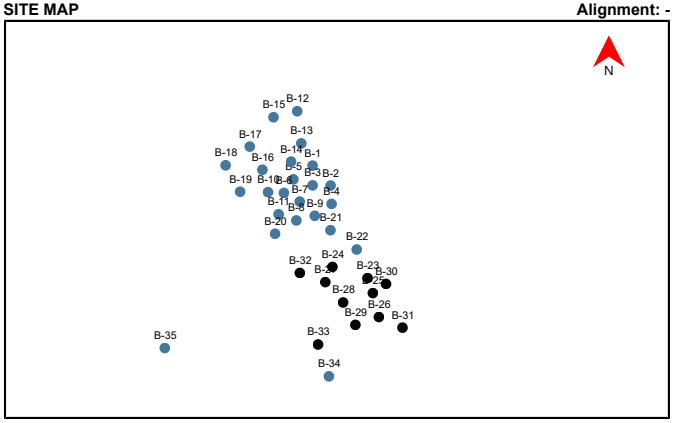
25-1298

BORING SNAPSHOT

SOUTHERN ENGINEERING



SITE MAP **Alignment: -**

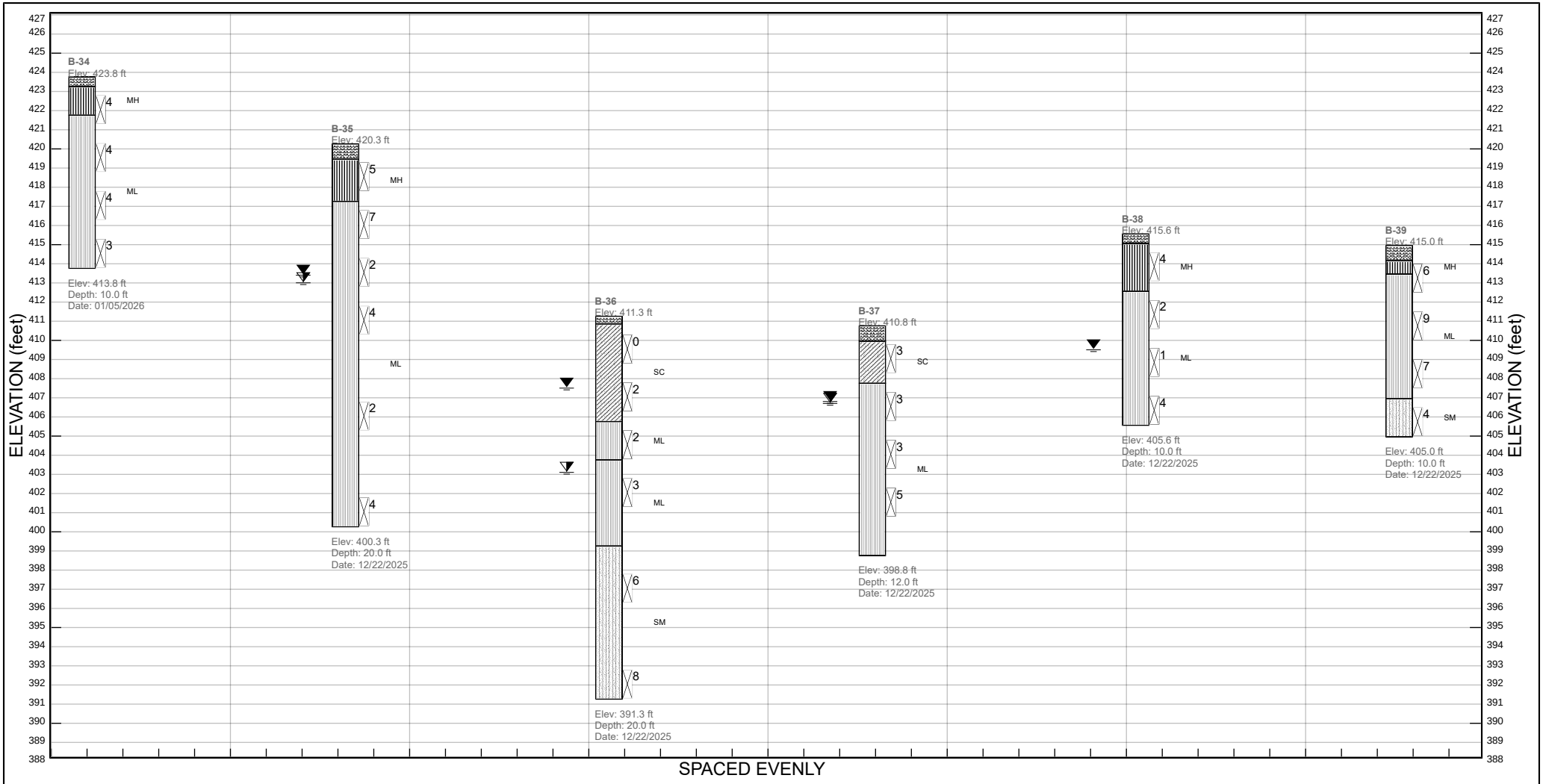


Rolesville Town Campus
Rolesville, NC

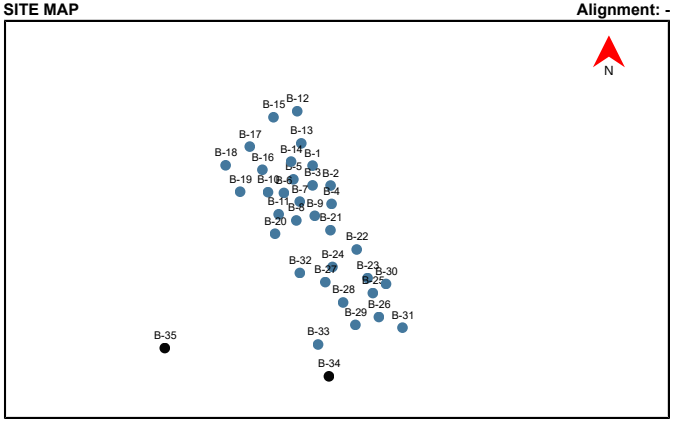
25-1298

BORING SNAPSHOT

SOUTHERN ENGINEERING



SITE MAP **Alignment: -**



Rolesville Town Campus
Rolesville, NC

25-1298

BORING SNAPSHOT

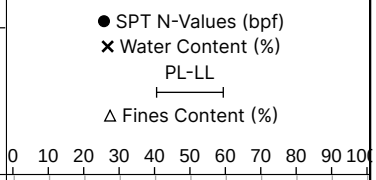
SOUTHERN ENGINEERING

Soil Boring Log: B-1

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 19.7 **CAVE IN** 20.5 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/30/2025
LOGGED BY D. Brown

N/E	790372.1 / 2161170.4
Lat / Lng	35.920421, -78.455671
Surface Elevation	424.4'
Boring Depth	25.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL 423.9					
		CULTIVATED - Soft, Brown-tan, Wet, Clayey Elastic SILT (MH) with coarse sand and trace organics 421.4		1		1-2.5	1-1-2 (3)
3		**RESIDUUM** - Soft to Medium Stiff, Tan and Brown, Wet, Sandy SILT (ML) with trace mica		2		3.5-5	2-2-3 (5)
				3		6-7.5	2-2-2 (4)
				4		8.5-10	2-3-3 (6)
12.5		Color transitions to pink-tan and brown below ~12.5 feet.		5		13.5-15	2-3-3 (6)
			▼	6		18.5-20	2-3-5 (8)
22		402.4 Medium Dense, Tan, Wet, Silty SAND (SM)		7		23.5-25	4-6-6 (12)
		399.4 End of boring at 25'					



SOUTHERN ENGINEERING

Soil Boring Log: B-2

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 15.9 **CAVE IN** 12.9 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 17.1 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/29/2025
LOGGED BY D. Brown

N/E	790325.3 / 2161219
Lat / Lng	35.920292, -78.455507
Surface Elevation	423.9'
Boring Depth	40.0 ft

Depth (ft)	Material Description	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.4	TOPSOIL 423.5	1	SS	1-2.5	2-3-4 (7)
3	**RESIDUUM** - Medium Stiff, Brown-tan, Wet, Clayey Elastic SILT (MH) with sand 420.9	2	SS	3.5-5	3-3-4 (7)
	Soft to Stiff, Tan, Wet, Sandy SILT (ML)	3	SS	6-7.5	1-2-2 (4)
		4	SS	8.5-10	1-1-2 (3)
12	Trace mica below ~12 feet.	5	SS	13.5-15	1-2-3 (5)
		6	SS	18.5-20	3-4-6 (10)
22	Gray and tan below ~22 feet.	7	SS	23.5-25	3-4-5 (9)
27	396.9 Medium Dense, Gray and Tan, Wet, Silty SAND (SM) with trace mica	8	SS	28.5-30	4-6-6 (12)
		9	SS	33.5-35	5-7-9 (16)
	383.9	10	SS	38.5-40	6-9-11 (20)

Water Levels: ▽ 15.9 ft (After Drilling), ▼ 17.1 ft (After Delay)

SPT N-Values (bpf) ● | Water Content (%) × | PL-LL | Δ Fines Content (%)

0 10 20 30 40 50 60 70 80 90 100

24.8 (Sample 1)
36.8 (Sample 2)

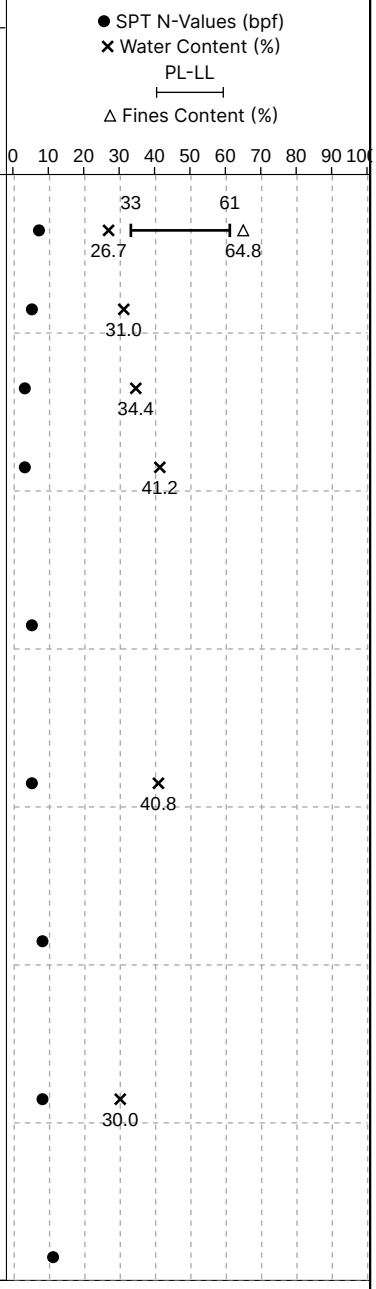
End of boring at 40'

Soil Boring Log: B-3

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 13.3 **CAVE IN** 13.5 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026
LOGGED BY D. Brown

N/E	790325.5 / 2161170.5
Lat / Lng	35.920293, -78.455671
Surface Elevation	423.4'
Boring Depth	35.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL 422.9					
		POSSIBLE FILL - Medium Stiff, Brown-tan, Wet, Clayey Elastic SILT (MH) with sand		1		1-2.5	2-3-4 (7)
3		420.4					
		RESIDUUM - Soft to Medium Stiff, Tan and Brown, Wet, Sandy SILT (ML) with trace mica		2		3.5-5	2-2-3 (5)
				3		6-7.5	1-2-1 (3)
				4		8.5-10	1-1-2 (3)
				5		13.5-15	2-2-3 (5)
				6		18.5-20	2-2-3 (5)
22		401.4					
		Loose to Medium Dense, Tan and Brown, Wet, Silty SAND (SM) with mica		7		23.5-25	2-4-4 (8)
				8		28.5-30	2-3-5 (8)
		388.4		9		33.5-35	4-5-6 (11)



End of boring at 35'

Soil Boring Log: B-4

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 13.8 **CAVE IN** 15.4 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026
LOGGED BY D. Brown

N/E	790282 / 2161222.1
Lat / Lng	35.920173, -78.455498
Surface Elevation	424.6'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
		GRAVEL 424.3					
		FILL - Stiff, Tan, Moist, Sandy SILT (ML) with trace organics 421.6		1		1-2.5	4-5-6 (11)
3		**FILL** - Medium Dense, Red-brown, Moist, Silty SAND (SM) 419.1		2		3.5-5	5-6-6 (12)
5.5		**RESIDUUM** - Very Loose to Loose, Tan and Brown, Moist to Wet, Silty SAND (SM)		3		6-7.5	3-2-3 (5)
				4		8.5-10	2-1-2 (3)
12		412.6 Medium Stiff, Tan and Olive, Saturated, Sandy SILT (ML) with mica	▼	5		13.5-15	1-2-3 (5)
		404.6		6		18.5-20	2-3-3 (6)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

End of boring at 20'

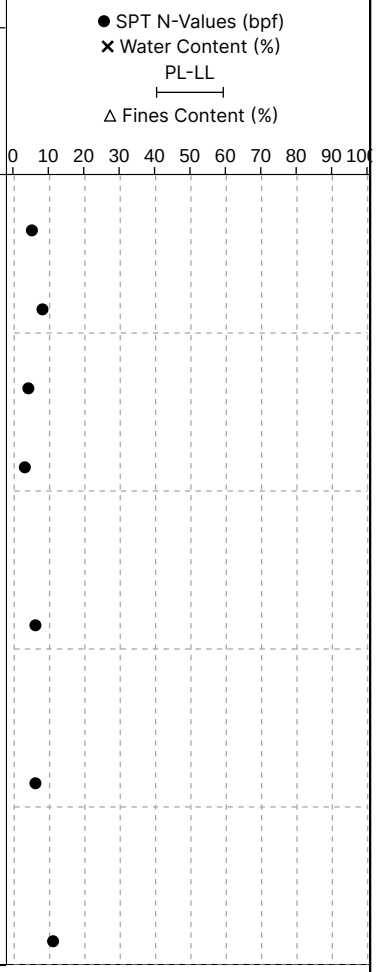
Soil Boring Log: B-5

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 10 ft **CAVE IN** 12.3 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/29/2025
LOGGED BY D. Brown

N/E	790339.5 / 2161118.6
Lat / Lng	35.920332, -78.455846
Surface Elevation	424.5'
Boring Depth	25.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL 424					
		CULTIVATED - Medium Stiff, Tan, Wet, Clayey Elastic SILT (MH) with sand and trace organics 421.5		1		1-2.5	2-2-3 (5)
3		**RESIDUUM** - Soft to Stiff, Tan and Brown, Wet, Sandy SILT (ML) with trace mica		2		3.5-5	3-3-5 (8)
				3		6-7.5	1-2-2 (4)
			▼	4		8.5-10	1-1-2 (3)
12		Red-brown from ~12 to 17 feet.		5		13.5-15	1-2-4 (6)
				6		18.5-20	2-2-4 (6)
		399.5		7		23.5-25	2-4-7 (11)

End of boring at 25'



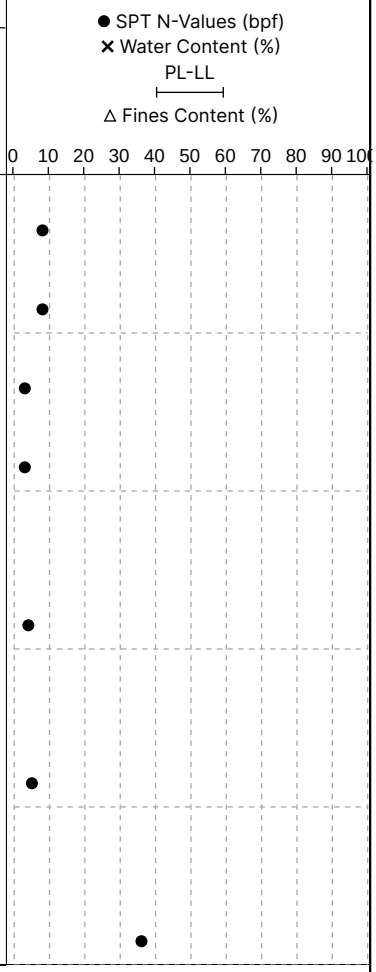
Soil Boring Log: B-6

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 9.1 ft **CAVE IN** 12.6 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/29/2025 **LOGGED BY** D. Brown

N/E	790307.2 / 2161093.4
Lat / Lng	35.920244, -78.455932
Surface Elevation	424.1'
Boring Depth	25.0 ft

Depth (ft)	Material Description	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5	TOPSOIL 423.6				
	CULTIVATED - Medium Stiff, Brown-tan, Wet, Clayey Elastic SILT (MH) with sand and trace pebbles 421.1	1		1-2.5	2-3-5 (8)
3	**RESIDUUM** - Soft to Medium Stiff, Tan and Brown, Moist, Sandy SILT (ML) with trace mica	2		3.5-5	3-3-5 (8)
6	Wet below ~6 feet.	3		6-7.5	1-2-1 (3)
8	Saturated below ~8 feet.	4		8.5-10	1-1-2 (3)
		5		13.5-15	1-2-2 (4)
		6		18.5-20	2-2-3 (5)
22	402.1 Dense, Tan and Olive, Wet, Silty SAND (SM) with mica 399.1	7		23.5-25	12-15-21 (36)

End of boring at 25'



Soil Boring Log: B-7

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 11.4 **CAVE IN** 11.6 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 10.2 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/19/2025
LOGGED BY D. Brown

N/E	790287.1 / 2161136.2
Lat / Lng	35.920188, -78.455788
Surface Elevation	423.1'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.4		TOPSOIL 422.7					
		CULTIVATED - Stiff, Brown-tan, Moist, Clayey Elastic SILT (MH) 420.1		1		1-2.5	3-5-5 (10)
3		**RESIDUUM** - Very Soft to Soft, Brown-tan, Wet, Sandy SILT (ML)		2		3.5-5	2-2-2 (4)
				3		6-7.5	1-2-2 (4)
9		Saturated below ~9 feet		4		8.5-10	1-1-1 (2)
				5		13.5-15	1-2-1 (3)
17		406.1 Loose, Brown, Wet, Silty SAND (SM)					
		403.1		6		18.5-20	2-3-3 (6)

End of boring at 20'

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Soil Boring Log: B-8

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 12.3 **CAVE IN** 15.9 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 10.4 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/19/2025
LOGGED BY D. Brown

N/E	790242.7 / 2161127.2
Lat / Lng	35.920066, -78.455819
Surface Elevation	423.5'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
		TOPSOIL 423.2					
		CULTIVATED - Soft, Brown and Gray, Moist, Clayey Elastic SILT (MH) with organics 420.5		1		1-2.5	2-2-2 (4)
3		**RESIDUUM** - Very Soft to Soft, Tan and Brown, Wet, Sandy SILT (ML) with mica		2		3.5-5	1-1-2 (3)
				3		6-7.5	1-1-1 (2)
8		Saturated below ~8 feet		4		8.5-10	1-1-1 (2)
				5		13.5-15	1-1-1 (2)
17		406.5 Loose, Tan and Brown, Wet, Silty SAND (SM) 403.5		6		18.5-20	2-3-3 (6)

End of boring at 20'

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

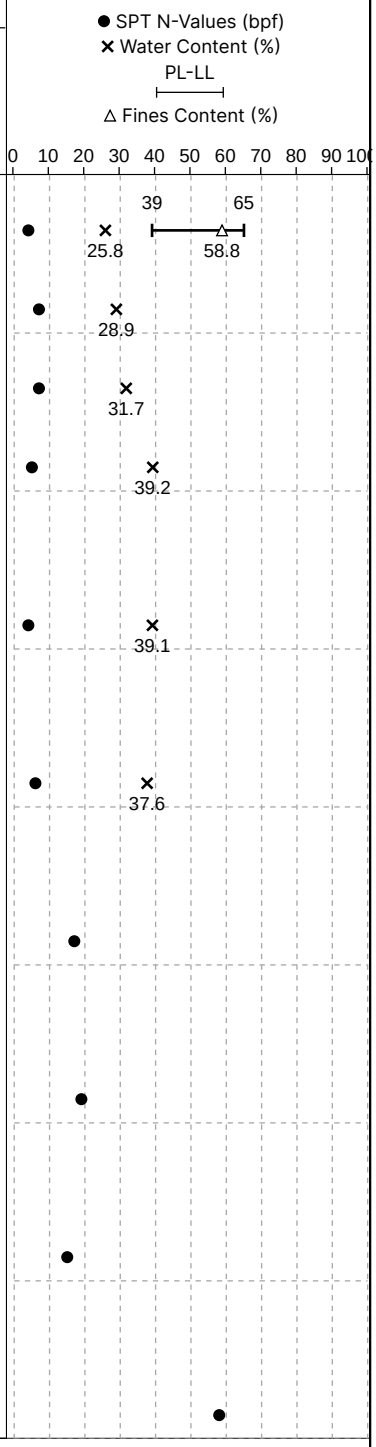
Soil Boring Log: B-9

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 11.8 ft **CAVE IN** 21.3 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 11.4 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/19/2025
LOGGED BY D. Brown

N/E	790253.7 / 2161177
Lat / Lng	35.920096, -78.455651
Surface Elevation	424.5'
Boring Depth	40.0 ft

Depth (ft)	Material Description		Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
	TOPSOIL	424.3				
3	**RESIDUUM** - Soft, Tan, Moist, Clayey Elastic SILT (MH)	421.5	1		1-2.5	2-2-2 (4)
	Medium Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML) with trace mica		2		3.5-5	2-3-4 (7)
			3		6-7.5	3-4-3 (7)
8		416.5	4		8.5-10	2-2-3 (5)
	Loose, Tan and Brown, Moist to Wet, Silty SAND (SM)					
12		412.5	5		13.5-15	2-2-2 (4)
	Loose to Medium Dense, Tan, White and Olive, Wet, Silty SAND (SM)		6		18.5-20	2-3-3 (6)
			7		23.5-25	7-8-9 (17)
			8		28.5-30	7-9-10 (19)
			9		33.5-35	5-5-10 (15)
37		387.5				
	Very Dense, Tan and Black, Wet, Silty SAND (SM)		10		38.5-40	27-33-25 (58)
		384.5				

End of boring at 40'



Soil Boring Log: B-10

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 11.4 **CAVE IN** 16.3 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/31/2025
LOGGED BY D. Brown

N/E	790308.9 / 2161050.3
Lat / Lng	35.920249, -78.456077
Surface Elevation	424.5'
Boring Depth	25.0 ft

Depth (ft)	Material Description	Elevation	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.4	TOPSOIL	424.1				
1.5	**CULTIVATED** - Medium Stiff, Tan - Brown, Moist, Clayey Elastic SILT (MH)	423	1		1-2.5	3-3-4 (7)
	RESIDUUM - Very Soft to Medium Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML) with mica		2		3.5-5	3-2-3 (5)
			3		6-7.5	3-3-4 (7)
8	Saturated below ~8 feet.		4		8.5-10	1-1-1 (2)
			5		13.5-15	2-2-3 (5)
17		407.5				
	Medium Dense, Tan and Brown, Wet, Silty SAND (SM)		6		18.5-20	2-3-5 (8)
		399.5	7		23.5-25	12-14-15 (29)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

End of boring at 25'

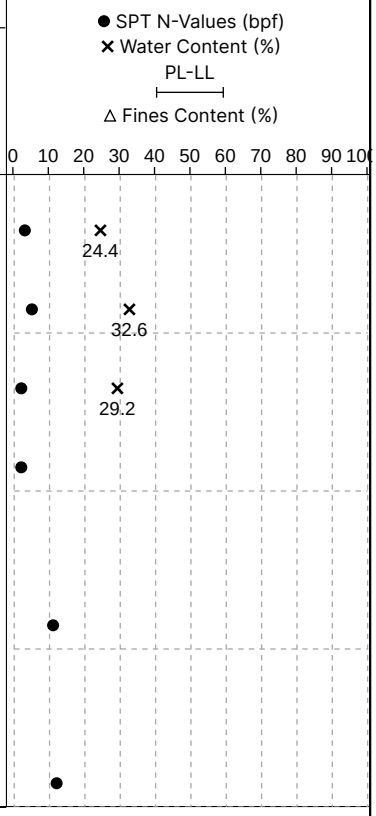
SOUTHERN ENGINEERING

Soil Boring Log: B-11

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 11.6 ft **CAVE IN** 17.6 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026
LOGGED BY D. Brown

N/E	790256.9 / 2161079.3
Lat / Lng	35.920106, -78.455980
Surface Elevation	422.7'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
		TOPSOIL	422.4					
2		**CULTIVATED** - Soft, Tan-brown, Moist, Clayey Elastic SILT (MH)	420.7		1		1-2.5	2-1-2 (3)
		RESIDUUM - Very Soft to Soft, Tan-brown, Moist to Wet, Sandy SILT (ML)			2		3.5-5	1-2-3 (5)
					3		6-7.5	WOH-1-1 (2)
					4		8.5-10	1-1-1 (2)
12			410.7	▼				
		Medium Dense, Brown and Tan, Wet, Silty Fine SAND (SM)			5		13.5-15	4-5-6 (11)
17			405.7					
		Medium Dense, Tan-white and Olive, Wet, Silty SAND (SM)			6		18.5-20	4-5-7 (12)
			402.7					



End of boring at 20'

SOUTHERN ENGINEERING

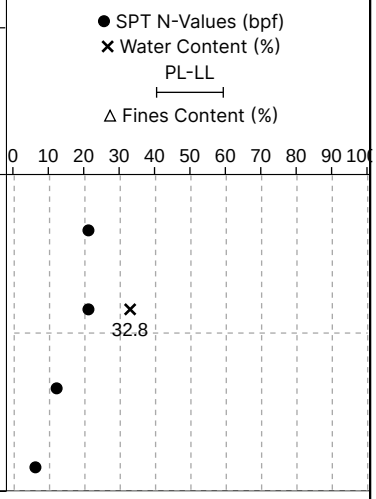
Soil Boring Log: B-12

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/30/2025 **LOGGED BY** D. Brown

N/E	790500 / 2161128
Lat / Lng	35.920773, -78.455811
Surface Elevation	432.0'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
		TOPSOIL	431.7					
1.5		**CULTIVATED** - Very Stiff, Tan-gray, Dry, Clayey Elastic SILT (MH) with sand	430.5		1		1-2.5	5-10-11 (21)
		RESIDUUM - Stiff to Very Stiff, Tan-gray and Red, Moist, Clayey Elastic SILT (MH)			2		3.5-5	7-9-12 (21)
					3		6-7.5	5-5-7 (12)
8			424					
		Medium Stiff, Tan and Red, Wet, Clayey SILT (ML)	422		4		8.5-10	2-3-3 (6)

End of boring at 10'



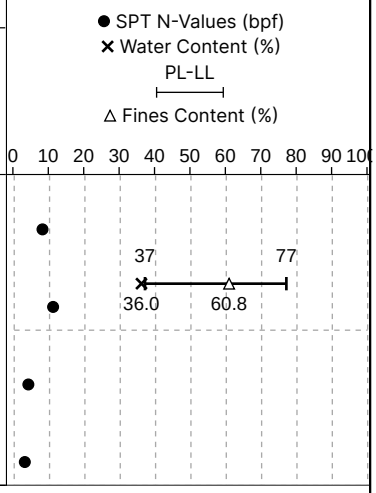
Soil Boring Log: B-13

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.5 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/30/2025
LOGGED BY D. Brown

N/E 790424.3 / 2161139.6
Lat / Lng 35.920565, -78.455774
Surface Elevation 427.8'
Boring Depth 10 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Bulk	Driven	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	427.3						
2		**CULTIVATED** - Medium Stiff, Gray-tan, Moist, Clayey Elastic SILT (MH)	425.8		1		X	1-2.5	3-4-4 (8)
		RESIDUUM - Stiff, Tan and Red, Moist, Clayey Elastic SILT (MH)	422.3		2		X	3.5-5	3-5-6 (11)
5.5		Soft, Olive-gray and Tan, Wet, Sandy SILT (ML) with mica			3		X	6-7.5	2-2-2 (4)
			417.8		4		X	8.5-10	1-1-2 (3)

End of boring at 10'



Composite bulk sample collected from ~1 to 6 feet below grade.

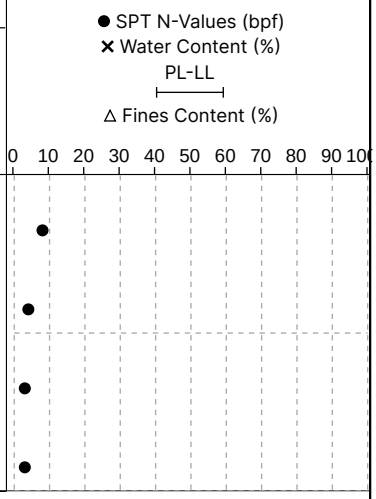
Soil Boring Log: B-14

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.6 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/31/2025 **LOGGED BY** D. Brown

N/E	790381.1 / 2161112.1
Lat / Lng	35.920447, -78.455867
Surface Elevation	426.3'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	425.8					
		CULTIVATED - Medium Stiff, Tan, Moist, Clayey Elastic SILT (MH)	423.3		1		1-2.5	2-3-5 (8)
3		**RESIDUUM** - Soft, Tan and White, Moist to Wet, Sandy SILT (ML) with mica			2		3.5-5	2-2-2 (4)
					3		6-7.5	1-1-2 (3)
			416.3		4		8.5-10	1-1-2 (3)

End of boring at 10'



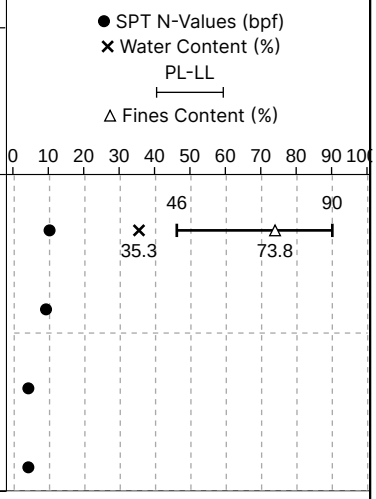
Soil Boring Log: B-15

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8.2 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/30/2025
LOGGED BY D. Brown

N/E	790485.5 / 2161064.3
Lat / Lng	35.920734, -78.456027
Surface Elevation	430.6'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	430.1					
		CULTIVATED - Stiff, Tan, Moist, Clayey Elastic SILT (MH)	427.6		1		1-2.5	2-4-6 (10)
3		**RESIDUUM** - Soft to Stiff, Tan, Moist to Wet, Sandy SILT (ML) with mica			2		3.5-5	4-4-5 (9)
					3		6-7.5	2-2-2 (4)
			420.6		4		8.5-10	2-2-2 (4)

End of boring at 10'



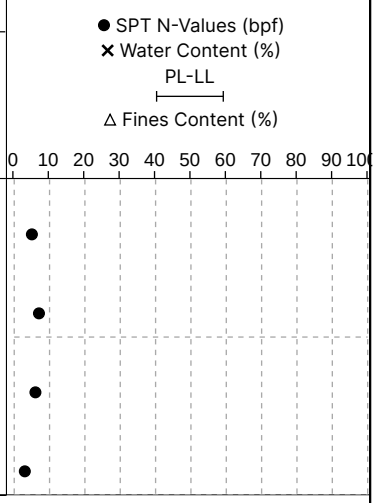
Soil Boring Log: B-16

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.3 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** next day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/31/2025 **LOGGED BY** D. Brown

N/E	790361.7 / 2161035
Lat / Lng	35.920394, -78.456128
Surface Elevation	426.3'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.8		TOPSOIL	425.5					
2		**CULTIVATED** - Medium Stiff, Tan, Wet, Clayey Elastic SILT (MH)	424.3		1		1-2.5	2-2-3 (5)
		RESIDUUM - Soft to Medium Stiff, Tan, Wet, Sandy SILT (ML)			2		3.5-5	2-3-4 (7)
					3		6-7.5	3-3-3 (6)
			416.3		4		8.5-10	1-2-1 (3)

End of boring at 10'



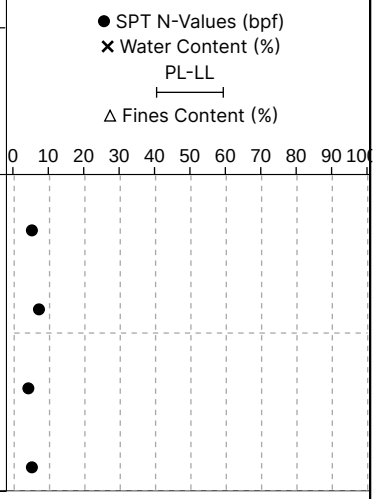
Soil Boring Log: B-17

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.2 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/30/2025 **LOGGED BY** D. Brown

N/E	790416 / 2161000.7
Lat / Lng	35.920544, -78.456243
Surface Elevation	427.0'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	426.5					
		CULTIVATED - Medium Stiff, Tan, Moist, Clayey Elastic SILT (MH)	424		1		1-2.5	2-2-3 (5)
3		**RESIDUUM** - Soft to Medium Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML) with mica			2		3.5-5	3-3-4 (7)
					3		6-7.5	2-2-2 (4)
			417		4		8.5-10	2-2-3 (5)

End of boring at 10'



Soil Boring Log: B-18

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/31/2025 **LOGGED BY** D. Brown

N/E	790371.6 / 2160935.9
Lat / Lng	35.920423, -78.456463
Surface Elevation	424.5'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.6		TOPSOIL	423.9					
		CULTIVATED - Medium Stiff, Tan-brown, Wet, Clayey Elastic SILT (MH)	421.5		1	X	1-2.5	2-3-3 (6)
3		**RESIDUUM** - Soft to Medium Stiff, Tan and Olive, Wet, Sandy SILT (ML) with mica			2	X	3.5-5	3-2-2 (4)
					3	X	6-7.5	2-3-3 (5)
			414.5		4	X	8.5-10	3-4-4 (8)

End of boring at 10'

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
△ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Soil Boring Log: B-19

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.7 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/31/2025 **LOGGED BY** D. Brown

N/E 790309.5 / 2160975.3
Lat / Lng 35.920252, -78.456331
Surface Elevation 424.4'
Boring Depth 10.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.4		TOPSOIL 424					
		CULTIVATED - Medium Stiff, Brown-tan, Wet, Clayey Elastic SILT (MH) with trace mica 421.4		1		1-2.5	2-2-3 (5)
3		**RESIDUUM** - Soft, Tan and Orange-tan, Wet, Sandy SILT (ML) with mica 418.9		2		3.5-5	2-2-2 (4)
5.5		Very Loose to Loose, Gray and Tan, Wet, Silty Fine SAND (SM) with mica		3		6-7.5	1-1-2 (3)
		414.4		4		8.5-10	2-2-3 (5)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

End of boring at 10'

Soil Boring Log: B-20

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.5 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** next day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026 **LOGGED BY** D. Brown

N/E	790211 / 2161069.8
Lat / Lng	35.919980, -78.456013
Surface Elevation	422.4'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.7		TOPSOIL	421.7					
		CULTIVATED - Medium Stiff, Brown-tan, Wet, Clayey Elastic SILT (MH) with sand	419.4		1		1-2.5	2-2-4 (6)
3		**RESIDUUM** - Soft to Medium Stiff, Brown, Tan and Olive, Wet, Sandy SILT (ML) with mica			2		3.5-5	2-2-2 (4)
					3		6-7.5	2-2-2 (4)
			412.4		4		8.5-10	2-2-3 (5)

End of boring at 10'

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Soil Boring Log: B-21

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8.2 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** next day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/19/2025 **LOGGED BY** D. Brown

N/E 790220.1 / 2161219.4
Lat / Lng 35.920003, -78.455508
Surface Elevation 425.3'
Boring Depth 10.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.8		GRAVEL 424.5					
		RESIDUUM - Medium Stiff, Orange-brown, Moist, Lean CLAY (CL) with sand 422.3		1		1-2.5	2-2-3 (5)
3		Medium Stiff, Tan and Brown, Moist, Clayey Sandy SILT (ML) with trace mica 419.8		2		3.5-5	3-2-3 (5)
5.5		Loose, Red-brown and Tan, Moist, Silty Fine SAND (SM) with trace mica		3		6-7.5	3-3-3 (6)
		415.3		4		8.5-10	2-2-3 (5)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

End of boring at 10'

Soil Boring Log: B-22

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 17.6 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 16.2 ft **CAVE IN** 15 ft
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/29/2025 **LOGGED BY** D. Brown

N/E	790175.2 / 2161290.3
Lat / Lng	35.919878, -78.455269
Surface Elevation	426.8'
Boring Depth	33.5 ft

Depth (ft)	Material Description	Elevation
0.5	TOPSOIL	426.3
	RESIDUUM - Medium Stiff, Red-brown and Tan, Moist, Clayey Elastic SILT (MH) with petroleum odor	423.8
3	Stiff, Red-brown and Tan, Moist, Sandy SILT (ML) with trace mica	418.8
8	Loose, White and Black, Moist, Silty SAND (SM)	414.8
12	Loose to Medium Dense, Brown and Tan, Wet to Saturated, Silty SAND (SM)	395.8
31	**PARTIALLY WEATHERED ROCK** - No Sample Recovery	393.3
	End of boring at 33.5'	

Water Level: ▼ at 12 ft

Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
1	X	1-2.5	3-3-5 (8)
2	X	3.5-5	4-5-8 (13)
3	X	6-7.5	3-5-4 (9)
4	X	8.5-10	3-5-2 (7)
5	X	13.5-15	3-3-2 (5)
6	X	18.5-20	3-3-3 (6)
7	X	23.5-25	3-3-4 (7)
8	X	28.5-30	5-7-8 (15)
9		33.5 -33.5	50/0' (100)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Hard drilling noted below ~31 feet.

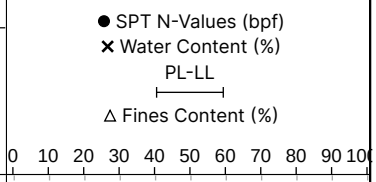
Soil Boring Log: B-23

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 16.3 **CAVE IN** 17.8 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 16.2 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day, 16 ft @ 6 weeks
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/24/2025
LOGGED BY D. Brown

N/E	790108 / 2161320
Lat / Lng	35.919693, -78.455170
Surface Elevation	429.3'
Boring Depth	20.0 ft

Depth (ft)	Material Description	Elevation	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5	TOPSOIL	428.8				
	RESIDUUM - Stiff, Red-brown and Tan, Moist, Clayey Elastic SILT (MH)	426.3	1	X	1-2.5	3-5-8 (13)
3	Soft, Red-brown and Tan, Moist to Wet, Sandy SILT (ML) with trace mica		2	X	3.5-5	3-5-5 (10)
			3	X	6-7.5	2-3-4 (7)
			4	X	8.5-10	2-2-3 (5)
12	Tan and brown below ~12 feet		5	X	13.5-15	1-2-1 (3)
17	Loose, Tan-white and Olive, Wet, Silty Coarse SAND (SM)	412.3	6	X	18.5-20	3-3-5 (8)
		409.3				

End of boring at 20'

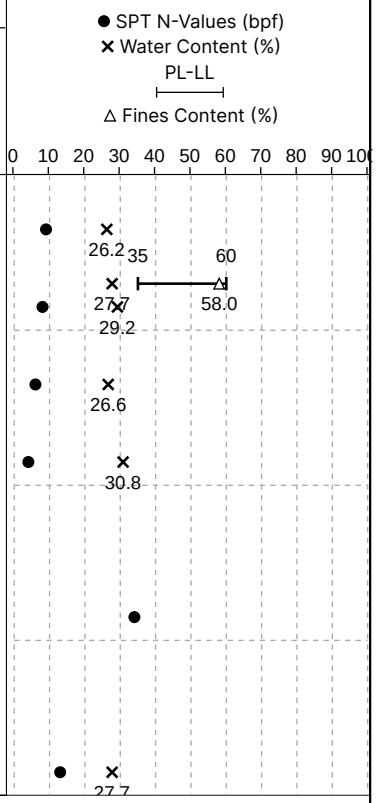


Soil Boring Log: B-24

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 13.5 **CAVE IN** 15.7 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026
LOGGED BY D. Brown

N/E 790133.7 / 2161225.2
Lat / Lng 35.919765, -78.455490
Surface Elevation 427.3'
Boring Depth 20 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Bulk	Driven	Sample Interval (ft)	Blow Counts (N Value)
		TOPSOIL 427						
3		**RESIDUUM** - Stiff, Red-brown and Tan, Moist, Clayey Elastic SILT (MH) 424.3		1		X	1-2.5	3-4-5 (9)
		Soft to Medium Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML)		2		X	3.5-5	3-4-4 (8)
				3		X	6-7.5	2-2-4 (6)
				4		X	8.5-10	2-2-2 (4)
12		415.3						
		Medium Dense to Dense, Tan-white and Gray, Wet to Saturated, Silty SAND (SM)	▼	5		X	13.5-15	15-16-18 (34)
		407.3		6		X	18.5-20	5-5-8 (13)
		End of boring at 20'						



Composite bulk sample collected from ~1 to 6 feet below grade.

Soil Boring Log: B-25

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 10.8 **CAVE IN** 19.9 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 16.2 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/23/2025
LOGGED BY D. Brown

N/E	790072.8 / 2161334.6
Lat / Lng	35.919596, -78.455122
Surface Elevation	428.4'
Boring Depth	36.5 ft

Depth (ft)	USCS Group	Material Description	
0.6		TOPSOIL	427.8
		RESIDUUM - Medium Stiff, Red-brown and Tan, Moist, Clayey Elastic SILT (MH)	425.4
3		Very Stiff, Brown and Tan, Moist, Clayey Sandy SILT (ML)	422.9
5.5		Medium Stiff, Brown, Tan and Olive, Moist to Wet, Sandy SILT (ML)	411.4
17		Loose to Medium Dense, Tan-white and Olive, Wet to Saturated, Silty SAND (SM)	391.9

Auger refusal at 36.5'

Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)	SPT N-Values (bpf)	Water Content (%)	Fines Content (%)
1		1-2.5	3-3-5 (8)		29.9	
2		3.5-5	4-8-8 (16)		25.0	
3		6-7.5	3-3-5 (8)		28.8	
4		8.5-10	2-3-3 (6)		28.9	
5		13.5-15	2-3-3 (6)			
6		18.5-20	2-3-4 (7)			
7		23.5-25	2-4-4 (8)			
8		28.5-30	3-3-3 (6)			
9		33.5-35	2-8-19 (27)			

Hard drilling noted below ~35 feet

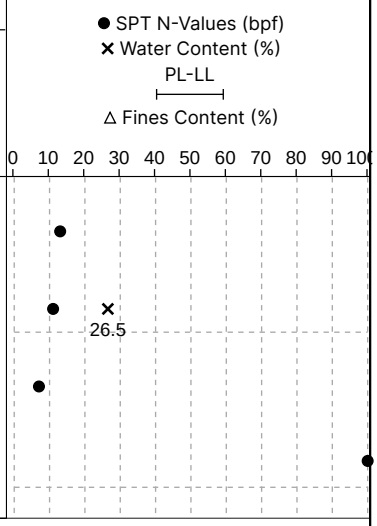
Soil Boring Log: B-26

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 9.9 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** 8 ft
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/23/2025 **LOGGED BY** D. Brown

N/E	790016.3 / 2161351
Lat / Lng	35.919441, -78.455067
Surface Elevation	427.3'
Boring Depth	11.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	426.8					
		CULTIVATED - Stiff, Red-brown and Tan, Moist, Clayey Elastic SILT (MH)	424.3		1		1-2.5	4-5-8 (13)
3		**RESIDUUM** - Medium Stiff to Stiff, Tan and Brown, Moist, Sandy SILT (ML) with trace mica			2		3.5-5	4-5-6 (11)
			419.3		3		6-7.5	3-3-4 (7)
8		Medium Dense, Tan, Moist, Silty SAND (SM)	417.8		4		8.5-9.8	4-16-50/0.3' (100)
9.5		**PARTIALLY WEATHERED ROCK** - Tan-white and Black, GRANITE [Sampled as Silty Sand]	416.3					

Auger refusal at 11'



Hard drilling noted below ~9 feet

Soil Boring Log: B-27

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8.4 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 13.8 ft **CAVE IN** 14 ft
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/23/2025 **LOGGED BY** D. Brown

N/E	790097.8 / 2161206.2
Lat / Lng	35.919667, -78.455555
Surface Elevation	427.4'
Boring Depth	19.7 ft

Depth (ft)	Material Description	Elevation
0	TOPSOIL	427.1
	CULTIVATED - Stiff, Brown, Moist, Clayey Elastic SILT (MH)	424.4
3	**RESIDUUM** - Loose, Brown, Moist, Silty SAND (SM)	421.9
5.5	Medium Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML) with trace mica	
12	Tan and olive below ~12 feet.	410.4
17	Medium Dense, Tan and Orange, Wet, Silty SAND (SM)	407.9
19.5	**PARTIALLY WEATHERED ROCK** - Tan and Orange, GRANITE [Sampled as silty sand]	407.7
	End of boring at 19.7'	

Water Levels: ▼ at ~12 ft

Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
1	SS	1-2.5	3-6-8 (14)
2	SS	3.5-5	3-3-2 (5)
3	SS	6-7.5	2-2-3 (5)
4	SS	8.5-10	2-2-3 (5)
5	SS	13.5-15	2-2-5 (7)
6	SS	18.5 -19.8	5-18-50/0.3' (100)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100
23.6

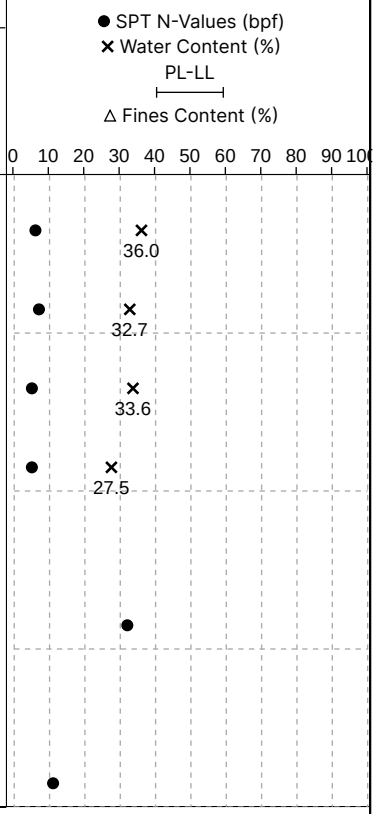
Soil Boring Log: B-28

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 14.2 **CAVE IN** 15.6 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026
LOGGED BY D. Brown

N/E	790049.9 / 2161254.3
Lat / Lng	35.919535, -78.455393
Surface Elevation	428.5'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.7		TOPSOIL 427.8					
		RESIDUUM - Medium Stiff, Red-brown, Moist, Clayey Elastic SILT (MH) 425.5		1		1-2.5	2-2-4 (6)
3		Medium Stiff, Tan and Red-brown, Moist, Sandy SILT (ML)		2		3.5-5	3-3-4 (7)
				3		6-7.5	2-2-3 (5)
8		420.5 Loose to Dense, Brown and Tan, Wet, Silty SAND (SM)		4		8.5-10	2-2-3 (5)
			▼	5		13.5-15	12-16-16 (32)
18		Tan-white and olive below ~18 feet 408.5		6		18.5-20	5-5-6 (11)

End of boring at 20'



Soil Boring Log: B-29

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 17.1 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/23/2025 **LOGGED BY** D. Brown

N/E	789997.3 / 2161287.8
Lat / Lng	35.919390, -78.455281
Surface Elevation	428.3'
Boring Depth	19.1 ft

Depth (ft)	Material Description	Elevation
0.7	TOPSOIL	427.6
1.5	**CULTIVATED** - Medium Stiff, Brown, Moist, Clayey Elastic SILT (MH)	426.8
	Medium Stiff to Stiff, Brown, Red and Tan, Moist, Sandy SILT (ML) with trace mica	
12		416.3
	PARTIALLY WEATHERED ROCK - White and Black, GRANITE [Sampled as silty sand]	
17	Tan and Black Below ~17 Feet	409.2
	End of boring at 19.1'	

Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)	SPT N-Values (bpf)	Water Content (%)
1	SS	1-2.5	2-3-3 (6)		26.6
2	SS	3.5-5	3-4-5 (9)		25.6
3	SS	6-7.5	2-3-3 (6)		30.3
4	SS	8.5-10	2-2-3 (5)		30.6
5	SS	13.5 -13.7	50/0.2' (100)		
6	SS	18.5-19.1	25-50/0.1' (100)		

PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Hard drilling noted below ~12 feet

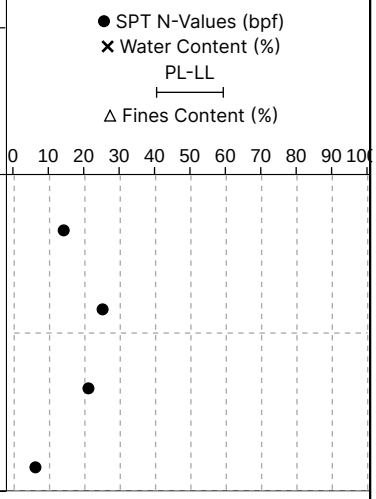
Soil Boring Log: B-30

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8.1 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/23/2025 **LOGGED BY** D. Brown

N/E	790094.5 / 2161370
Lat / Lng	35.919655, -78.455002
Surface Elevation	427.0'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	426.5					
		CULTIVATED - Medium Dense, Brown, Moist, Clayey Coarse SAND (SC)	424		1	X	1-2.5	3-6-8 (14)
3		**RESIDUUM** - Medium Dense, Red-brown and Tan, Moist, Clayey Coarse SAND (SC)	421.5		2	X	3.5-5	7-10-15 (25)
5.5		Very Stiff, Red-brown and Gray, Moist, Sandy Elastic SILT (MH)	419		3	X	6-7.5	5-10-11 (21)
8		Medium Stiff, Brown and Tan, Wet, Sandy SILT (ML)	417		4	X	8.5-10	3-3-3 (6)

End of boring at 10'

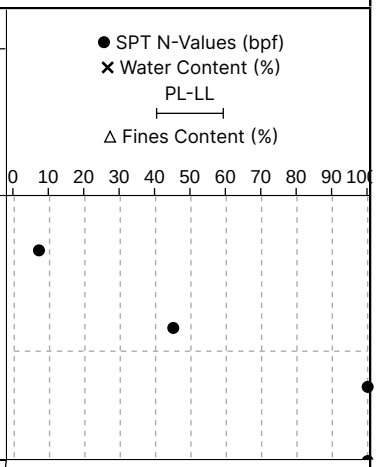


Soil Boring Log: B-31

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/23/2025 **LOGGED BY** D. Brown

N/E	789991.5 / 2161415
Lat / Lng	35.919372, -78.454852
Surface Elevation	425.0'
Boring Depth	8.5 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.8		TOPSOIL	424.2					
	SC	**CULTIVATED** - Loose, Brown, Moist, Clayey Coarse SAND (SC)	422		1		1-2.5	3-3-4 (7)
3	SM	**RESIDUUM** - Dense, Tan, Moist, Silty SAND (SM)			2		3.5-5	5-5-40 (45)
5.5			419.5		3		6-6.3	50/0.3' (100)
		PARTIALLY WEATHERED ROCK - Tan, GRANITE [Sampled as Silty Sand]	416.5		4		8.5-8.5	50/0' (100)
		End of boring at 8.5'						



Hard drilling noted below ~4 feet

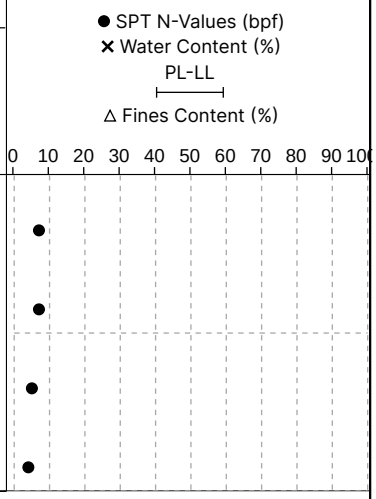
Soil Boring Log: B-32

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.2 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY None **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH** Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026 **LOGGED BY** D. Brown

N/E	790118.8 / 2161137.3
Lat / Lng	35.919726, -78.455787
Surface Elevation	424.3'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	423.8					
1.5		**CULTIVATED** - Medium Stiff, Brown and Tan, Moist, Clayey Elastic SILT (MH)	422.8		1		1-2.5	2-3-4 (7)
		RESIDUUM - Soft to Medium Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML) with mica			2		3.5-5	2-3-4 (7)
					3		6-7.5	2-2-3 (5)
8		Saturated below ~8 feet.	414.3		4		8.5-10	1-2-2 (4)

End of boring at 10'

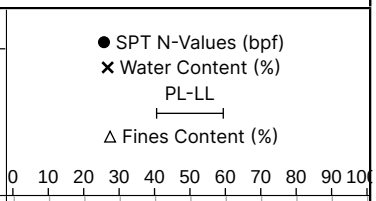


Soil Boring Log: B-33

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.5 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026 **LOGGED BY** D. Brown

N/E	789950.7 / 2161187.4
Lat / Lng	35.919263, -78.455621
Surface Elevation	423.7'
Boring Depth	9.3 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.4		TOPSOIL	423.3					
2		**CULTIVATED** - Medium Stiff, Brown, Wet, Clayey Elastic SILT (MH)	421.7		1		1-2.5	3-3-3 (6)
3		**RESIDUUM** - Medium Stiff, Brown, Wet, Clayey SILT (ML)	420.7		2		3.5-5	3-3-3 (6)
5.5		Loose, Tan and Olive, Wet, Silty SAND (SM)	418.2					
		Medium Dense to Dense, White and Black, Moist, Silty SAND (SM)	414.7		3		6-7.5	5-7-6 (13)
9		**PARTIALLY WEATHERED ROCK** - White and Black, GRANITE [Sampled as silty sand]	414.4		4		8.5-9.3	28-50/0.3' (100)
		End of boring at 9.3'						



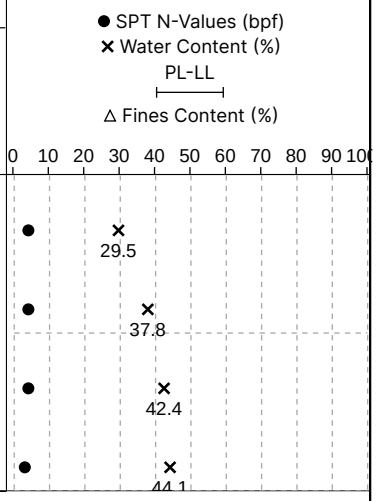
Soil Boring Log: B-34

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.5 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 01/05/2026
LOGGED BY D. Brown

N/E	789875.7 / 2161217
Lat / Lng	35.919057, -78.455522
Surface Elevation	423.8'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	423.3					
2		**CULTIVATED** - Soft, Tan, Moist, Clayey Elastic SILT (MH)	421.8		1		1-2.5	2-2-2 (4)
		RESIDUUM - Soft, Tan, Wet to Saturated, Sandy SILT (ML)			2		3.5-5	2-2-2 (4)
					3		6-7.5	1-2-2 (4)
			413.8		4		8.5-10	2-1-2 (3)

End of boring at 10'



Soil Boring Log: B-35

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 7.3 ft **CAVE IN** 12.1 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 6.9 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/22/2025
LOGGED BY D. Brown

N/E	789940 / 2160774.2
Lat / Lng	35.919240, -78.457017
Surface Elevation	420.3'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.8		TOPSOIL	419.5					
		CULTIVATED - Medium Stiff, Tan, Wet, Clayey Elastic SILT (MH)	417.3		1	X	1-2.5	2-2-3 (5)
3		**RESIDUUM** - Very Soft to Medium Stiff, Tan and Gray, Wet to Saturated, Sandy SILT (ML) with mica			2	X	3.5-5	3-4-3 (7)
				▼	3	X	6-7.5	1-1-1 (2)
					4	X	8.5-10	1-2-2 (4)
					5	X	13.5-15	1-1-1 (2)
			400.3		6	X	18.5-20	2-2-2 (4)

End of boring at 20'

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Soil Boring Log: B-36

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 8.2 ft **CAVE IN** 12.3 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 3.8 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/22/2025
LOGGED BY D. Brown

N/E	789714.4 / 2160340.5
Lat / Lng	35.918627, -78.458486
Surface Elevation	411.3'
Boring Depth	20.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.4		TOPSOIL 410.9					
		ALLUVIUM - Very Loose, Dark Gray, Clayey SAND (SC)		1		1-2.5	WOH-WOH-WOH (0)
3		Light gray below ~3 feet.		2		3.5-5	1-1-1 (2)
5.5		405.8					
		POSSIBLE RESIDUUM - Very Soft, Gray, Sandy SILT (ML) 403.8		3		6-7.5	WOH-1-1 (2)
7.5		**RESIDUUM** - Soft, Tan-white and Gray, Sandy SILT (ML)		4		8.5-10	1-1-2 (3)
12		399.3					
		Loose, Tan and Gray, Silty SAND (SM)		5		13.5-15	2-2-4 (6)
		391.3		6		18.5-20	3-3-5 (8)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

End of boring at 20'

Soil Boring Log: B-37

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING 4.1 ft **CAVE IN** 8.8 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 4 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/22/2025
LOGGED BY D. Brown

N/E	789544 / 2160261.1
Lat / Lng	35.918160, -78.458757
Surface Elevation	410.8'
Boring Depth	12.0 ft

Depth (ft)	USCS Group	Material Description	Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.8		TOPSOIL 410					
		ALLUVIUM - Very Loose, Gray, Wet, Clayey Coarse SAND (SC) with trace organics 407.8		1		1-2.5	2-2-1 (3)
3		**RESIDUUM** - Soft to Medium Stiff, Gray and Tan, Wet, Sandy SILT (ML)		2		3.5-5	2-1-2 (3)
5.5		Orange-tan below ~5.5 feet.		3		6-7.5	1-1-2 (3)
				4		8.5-10	2-2-3 (5)
		398.8					

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

Auger refusal at 12'

Soil Boring Log: B-38

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 8.2 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY 6.1 ft **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto
DELAY LENGTH Next Day
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/22/2025
LOGGED BY D. Brown

N/E	789565 / 2160490.2
Lat / Lng	35.918214, -78.457983
Surface Elevation	415.6'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.5		TOPSOIL	415.1					
		CULTIVATED - Soft, Brown-tan, Moist, Clayey Elastic SILT (MH)	412.6		1		1-2.5	3-2-2 (4)
3		**RESIDUUM** - Very Soft to Soft, Tan and Brown, Wet to Saturated, Sandy SILT (ML) with mica			2		3.5-5	1-1-1 (2)
					3		6-7.5	WOH-WOH-1 (1)
			405.6		4		8.5-10	1-2-2 (4)

● SPT N-Values (bpf)
× Water Content (%)
PL-LL
Δ Fines Content (%)
0 10 20 30 40 50 60 70 80 90 100

End of boring at 10'

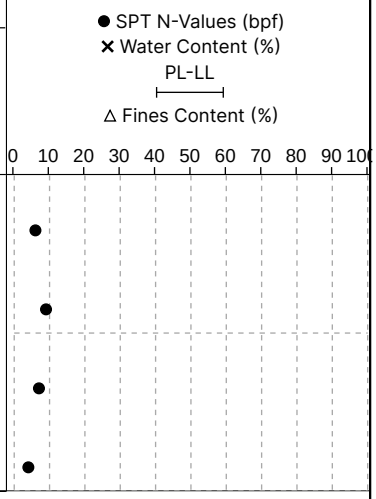
Soil Boring Log: B-39

PROJECT Rolesville Town Campus
CLIENT NAME Town of Rolesville
PROJECT LOCATION Rolesville, NC
GROUNDWATER:
PROJECT NUMBER 25-1298
AFTER DRILLING None **CAVE IN** 7.3 ft
DRILLING FIRM Bridger Drilling
AFTER DELAY F.I.A.D. **CAVE IN** N/A
DRILL RIG CME-45 **HAMMER TYPE** Auto **DELAY LENGTH**
METHOD 2.25-inch (ID) H.S.A. **DATE DRILLED** 12/22/2025 **LOGGED BY** D. Brown

N/E	789484.6 / 2160355.5
Lat / Lng	35.917995, -78.458439
Surface Elevation	415.0'
Boring Depth	10.0 ft

Depth (ft)	USCS Group	Material Description		Water Levels	Sample #	Sample Type	Sample Interval (ft)	Blow Counts (N Value)
0.8		TOPSOIL	414.2					
1.5		**CULTIVATED** - Medium Stiff, Brown, Moist, Clayey Elastic SILT (MH)	413.5		1		1-2.5	2-3-3 (6)
		RESIDUUM - Medium Stiff to Stiff, Tan and Brown, Moist to Wet, Sandy SILT (ML) with trace mica			2		3.5-5	3-4-5 (9)
					3		6-7.5	2-3-4 (7)
8			407					
		Loose, Tan, Wet, Silty SAND (SM)	405		4		8.5-10	2-1-3 (4)

End of boring at 10'



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UNIFIED SOIL CLASSIFICATION (ASTM D-2487)

MATERIAL TYPES	CRITERIA FOR ASSIGNING SOIL GROUP NAMES			GROUP SYMBOL	SOIL GROUP NAMES & LEGEND
COARSE-GRAINED SOILS >50% RETAINED ON NO. 200 SIEVE	GRAVELS >50% OF COARSE FRACTION RETAINED ON NO 4. SIEVE	CLEAN GRAVELS <5% FINES	Cu>4 AND 1<Cc<3	GW	WELL-GRADED GRAVEL
			Cu>4 AND 1>Cc>3	GP	POORLY-GRADED GRAVEL
		GRAVELS WITH FINES >12% FINES	FINES CLASSIFY AS ML OR CL	GM	SILTY GRAVEL
			FINES CLASSIFY AS CL OR CH	GC	CLAYEY GRAVEL
	SANDS >50% OF COARSE FRACTION PASSES ON NO 4. SIEVE	CLEAN SANDS <5% FINES	Cu>6 AND 1<Cc<3	SW	WELL-GRADED SAND
			Cu>6 AND 1>Cc>3	SP	POORLY-GRADED SAND
		SANDS AND FINES >12% FINES	FINES CLASSIFY AS ML OR CL	SM	SILTY SAND
			FINES CLASSIFY AS CL OR CH	SC	CLAYEY SAND
FINE-GRAINED SOILS >50% PASSES NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT<50	INORGANIC	PI>7 AND PLOTS>"A" LINE	CL	LOW PLASTICITY (LEAN) CLAY
			PI>4 AND PLOTS<"A" LINE	ML	LOW PLASTICITY SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OL	ORGANIC CLAY OR SILT
	SILTS AND CLAYS LIQUID LIMIT>50	INORGANIC	PI PLOTS >"A" LINE	CH	HIGH PLASTICITY (FAT) CLAY
			PI PLOTS <"A" LINE	MH	HIGH ELASTICITY SILT
		ORGANIC	LL (oven dried)/LL (not dried)<0.75	OH	ORGANIC CLAY OR SILT
HIGHLY ORGANIC SOILS		PRIMARILY ORGANIC MATTER, DARK IN COLOR, AND ORGANIC ODOR		PT	PEAT

ABBREVIATIONS & SYMBOLS

HSA - HOLLOW-STEM AUGER
HA - HAND AUGER
SPT - STANDARD PENETRATION TEST
BPF - BLOWS PER FOOT
PL - PLASTIC LIMIT
LL - LIQUID LIMIT
MC - MOISTURE CONTENT
SS - SPLIT SPOON
AP - AUGER PROBE
WC - WATER CONTENT
PWR - PARTIALLY WEATHERED ROCK
USCS - UNIFIED SOIL CLASSIFICATION SYSTEM
WOH - WEIGHT OF HAMMER
WOR - WEIGHT OF RODS

AR - AUGER REFUSAL
REF - REFUSAL
HAR - HAND AUGER REFUSAL
FIAD - FILLED IMMEDIATELY AFTER DRILLING/DIGGING
DRY - REQUIRES WETTING TO REACH OPTIMUM
MOIST - AT OR NEAR OPTIMUM
WET - REQUIRES DRYING TO REACH OPTIMUM
SAT - SATURATED (FREE WATER)
▽ - WATER LEVEL DURING DRILLING
▽ - WATER LEVEL IMMED. AFTER DRILLING
▼ - WATER LEVEL AFTER DELAY (WAIT PERIOD)
▨ - BOREHOLE CAVE-IN AFTER DRILLING/DELAY

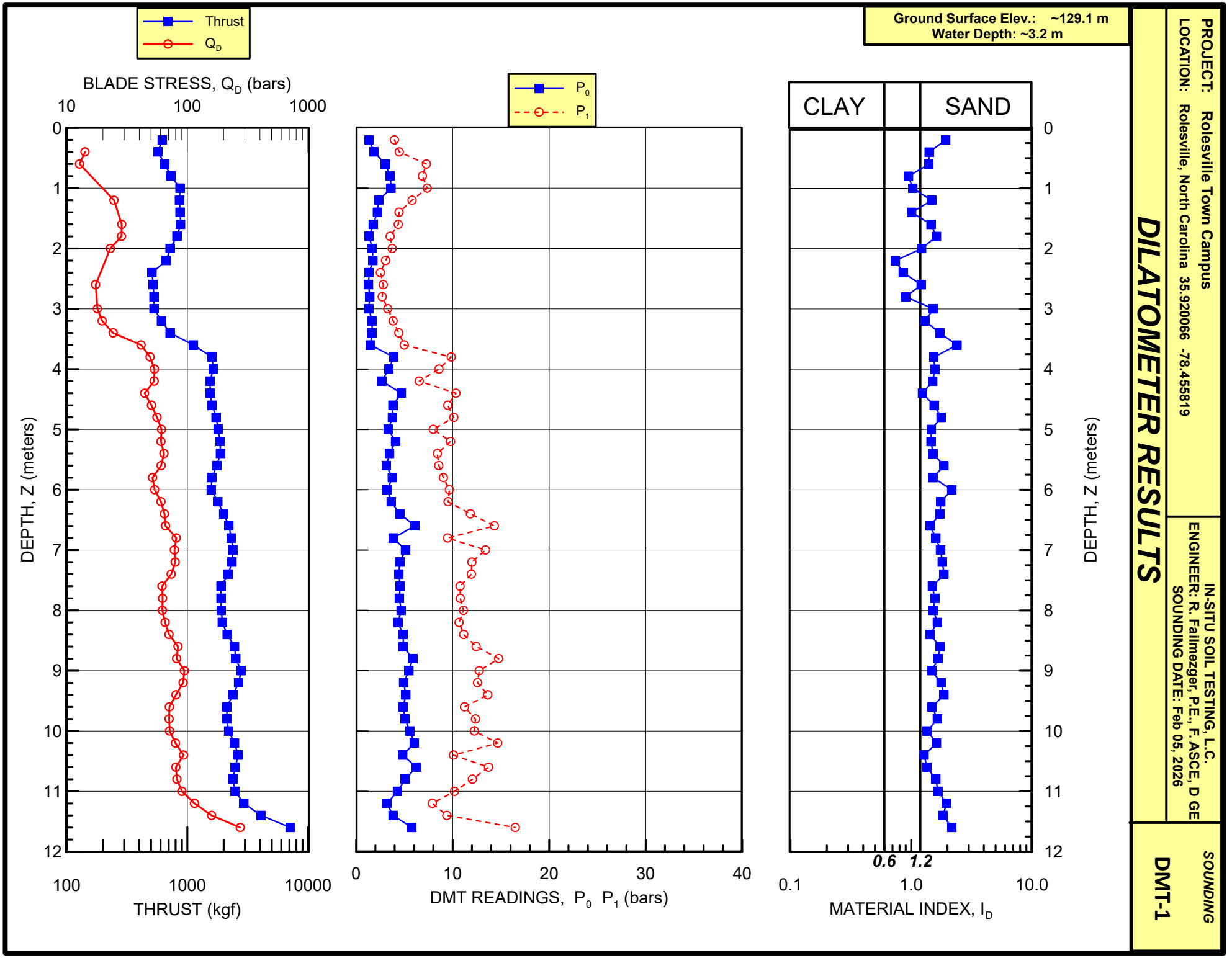
PENETRATION RESISTANCE
(RECORDED AS BLOWS PER 6 IN.)

SAND & GRAVEL		SILT & CLAY	
DENSITY	BLOWS/FT*	CONSISTENCY	BLOWS/FT*
VERY LOOSE	0 - 3	VERY SOFT	0 - 1
LOOSE	4 - 10	SOFT	2 - 4
MEDIUM DENSE	10 - 30	MEDIUM STIFF (FIRM)	4 - 8
DENSE	30 - 50	STIFF	8 - 15
VERY DENSE	51+	VERY STIFF	15 - 30
		HARD	31+

* NUMBER OF BLOWS OF 140 LB HAMMER FALLING 30 INCHES TO DRIVE A 2 INCH O.D. (1-3/8 INCH I.D.) SPLIT-BARREL SAMPLER THE LAST 12 INCHES OF AN 18-INCH DRIVE (ASTM-1586 STANDARD PENETRATION TEST).

SOUTHERN ENGINEERING

LEGEND TO SOIL DESCRIPTIONS


Thrust
Q_D
BLADE STRESS, Q_D (bars)
10
100
1000
DEPTH, Z (meters)
0
1
2
3
4
5
6
7
8
9
10
11
12
100
1000
10000
THRUST (kgf)
P_0
P_1
0
10
20
30
40
DMT READINGS, P_0 P_1 (bars)
CLAY
SAND
0.6
1.2
0.1
1.0
10.0
MATERIAL INDEX, I_D
DEPTH, Z (meters)
Ground Surface Elev.: ~129.1 m
Water Depth: ~3.2 m
DILATOMETER RESULTS
PROJECT: Rolesville Town Campus
LOCATION: Rolesville, North Carolina 35.920066 -78.455819
IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger, P.E., F.ASCE, D GE
SOUNDING DATE: Feb 05, 2026
SOUNDING
DMT-1

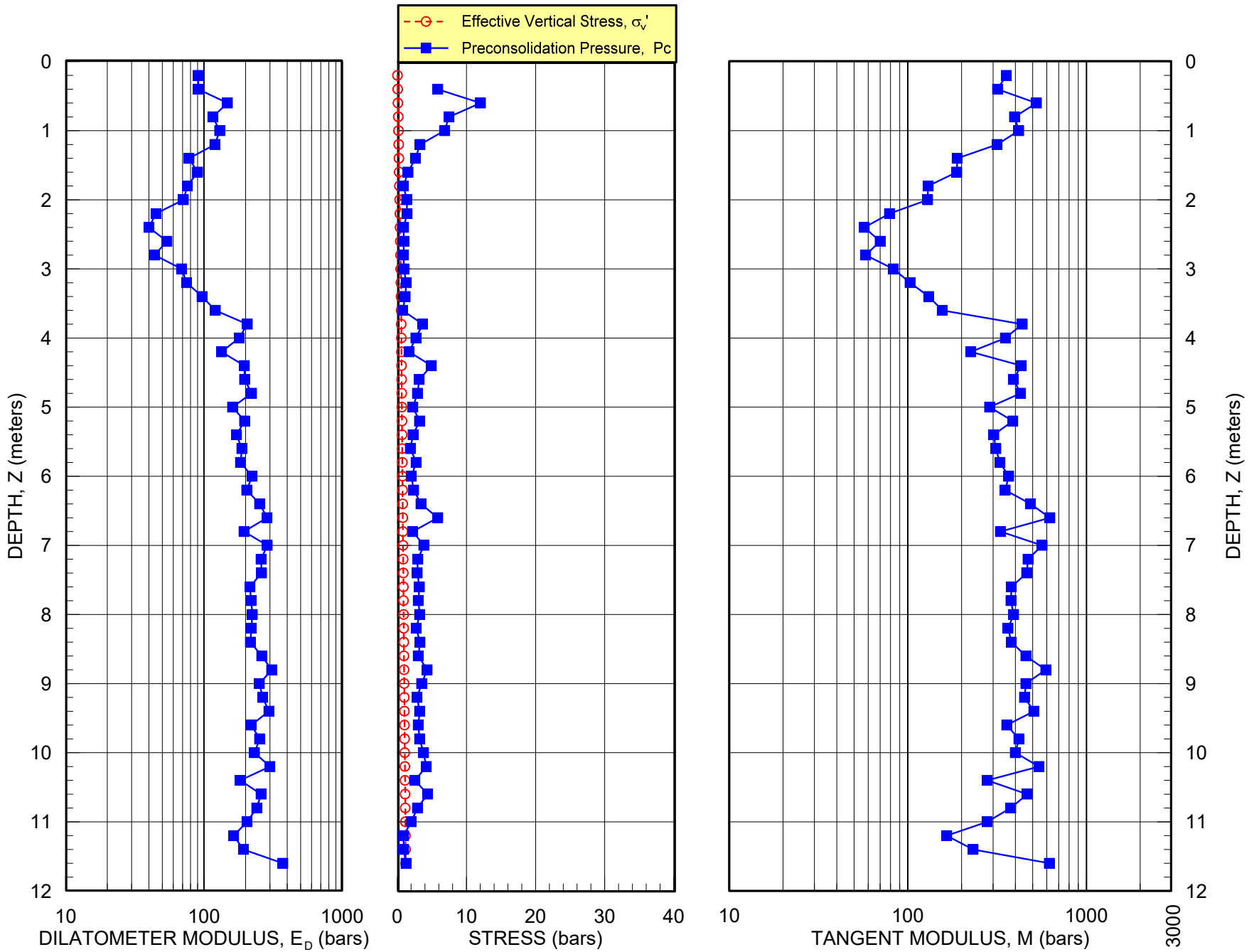
Ground Surface Elev.: ~129.1 m
Water Depth: ~3.2 m

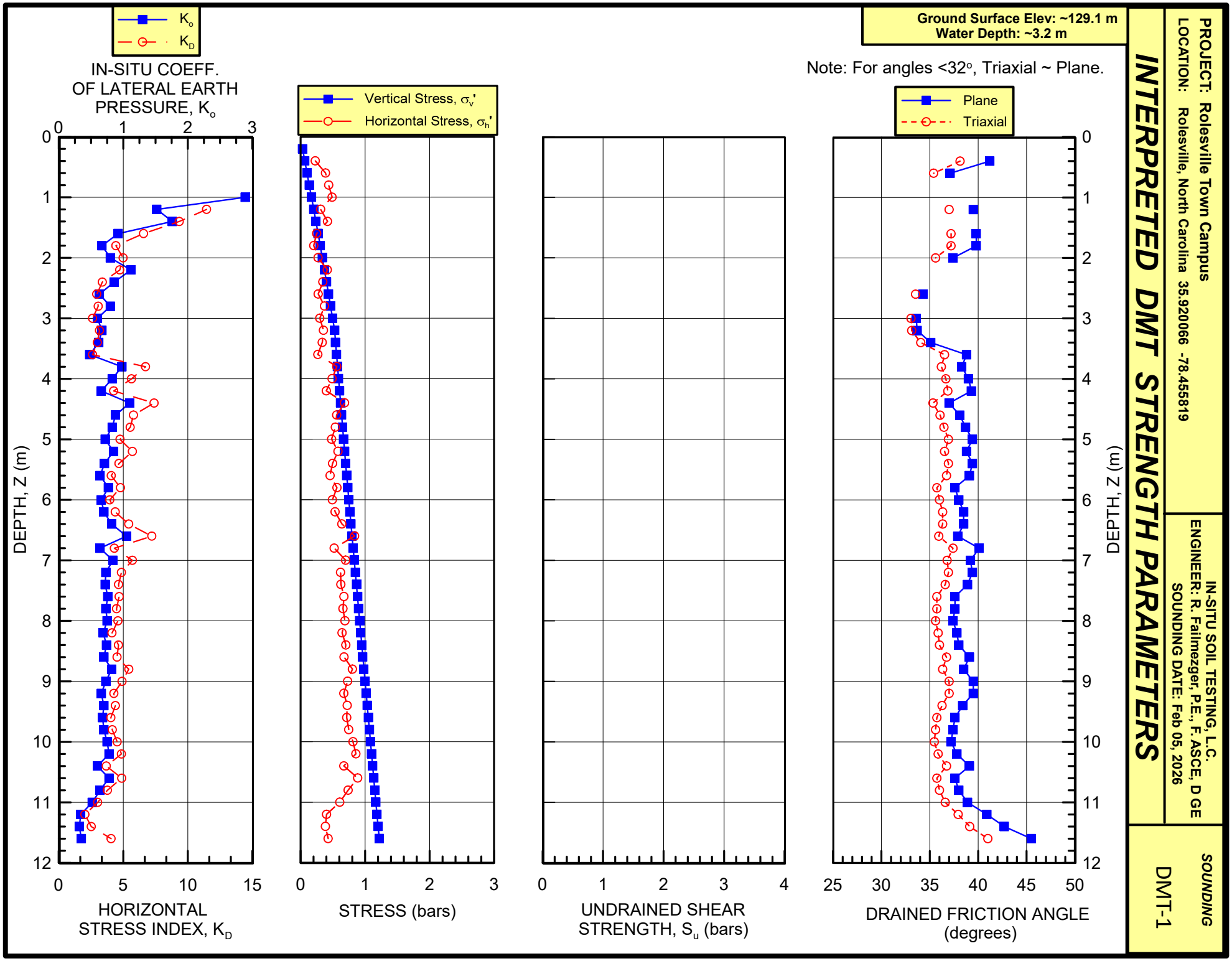
INTERPRETED DMT DEFORMATION PARAMETERS

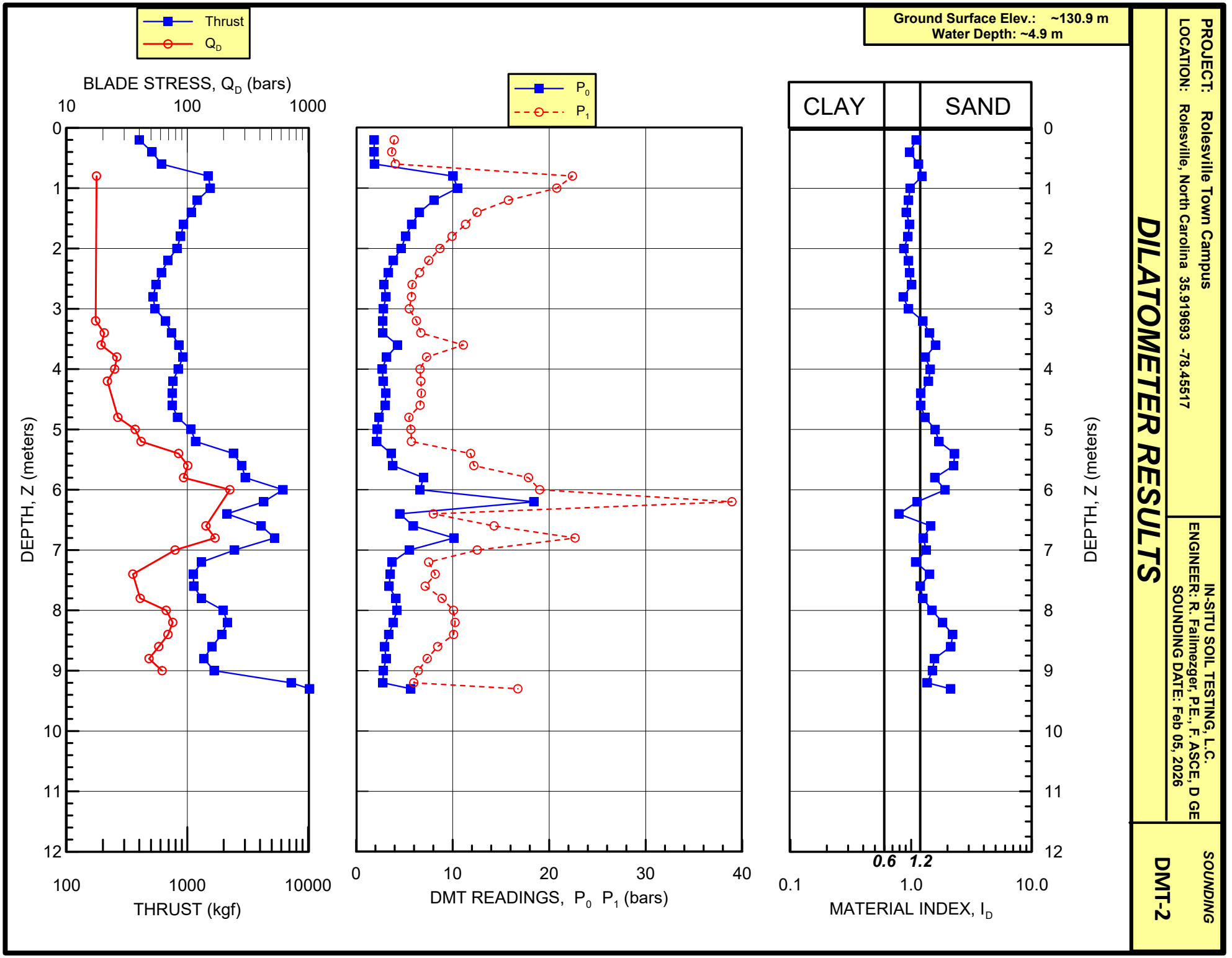
PROJECT: Rolesville Town Campus
LOCATION: Rolesville, North Carolina 35.920066 -78.455819

IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger
SOUNDING DATE: Feb 05, 2026

SOUNDING DMT-1




INTERPRETED DMT STRENGTH PARAMETERS
PROJECT: Rolesville Town Campus
LOCATION: Rolesville, North Carolina 35.920066 -78.455819
IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger, P.E., F.ASCE, D GE
SOUNDING DATE: Feb 05, 2026
SOUNDING
DMT-1
Ground Surface Elev: ~129.1 m
Water Depth: ~3.2 m
Note: For angles <32°, Triaxial ~ Plane.
IN-SITU COEFF. OF LATERAL EARTH PRESSURE, K_o
K_o
K_D
HORIZONTAL STRESS INDEX, K_D
Vertical Stress, σ_v'
Horizontal Stress, σ_h'
STRESS (bars)
UNDRAINED SHEAR STRENGTH, S_u (bars)
Plane
Triaxial
DRAINED FRICTION ANGLE (degrees)
DEPTH, Z (m)


Thrust
Q_D
BLADE STRESS, Q_D (bars)
10
100
1000
DEPTH, Z (meters)
0
1
2
3
4
5
6
7
8
9
10
11
12
100
1000
10000
THRUST (kgf)
P_0
P_1
0
10
20
30
40
DMT READINGS, P_0 P_1 (bars)
CLAY
SAND
0.6
1.2
0.1
1.0
10.0
MATERIAL INDEX, I_D
DEPTH, Z (meters)
Ground Surface Elev.: ~130.9 m
Water Depth: ~4.9 m
DILATOMETER RESULTS
PROJECT: Rolesville Town Campus
LOCATION: Rolesville, North Carolina 35.919693 -78.45517
IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger, P.E., F.ASCE, D GE
SOUNDING DATE: Feb 05, 2026
SOUNDING
DMT-2

Ground Surface Elev.: ~130.9 m
Water Depth: ~4.9 m

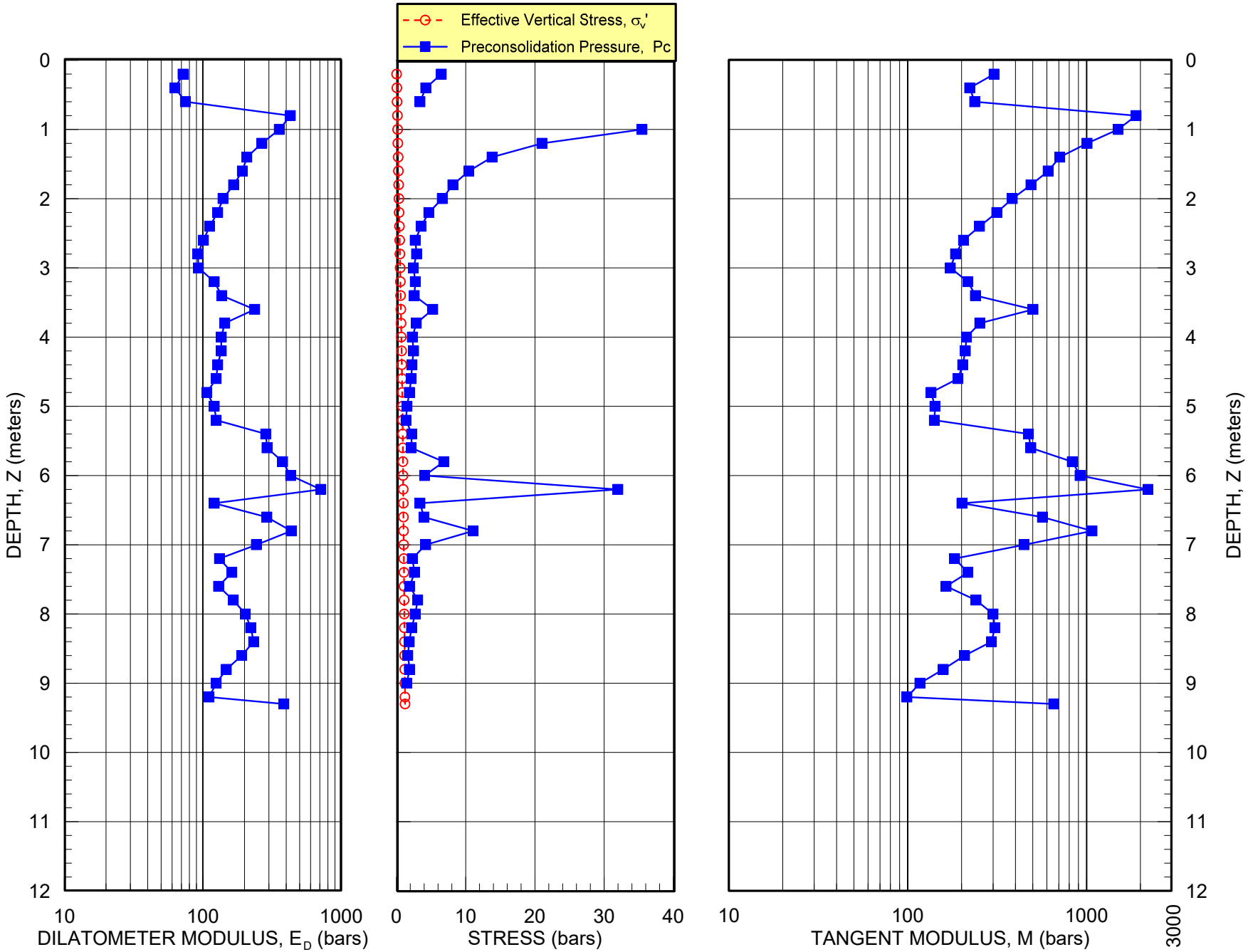
INTERPRETED DMT DEFORMATION PARAMETERS

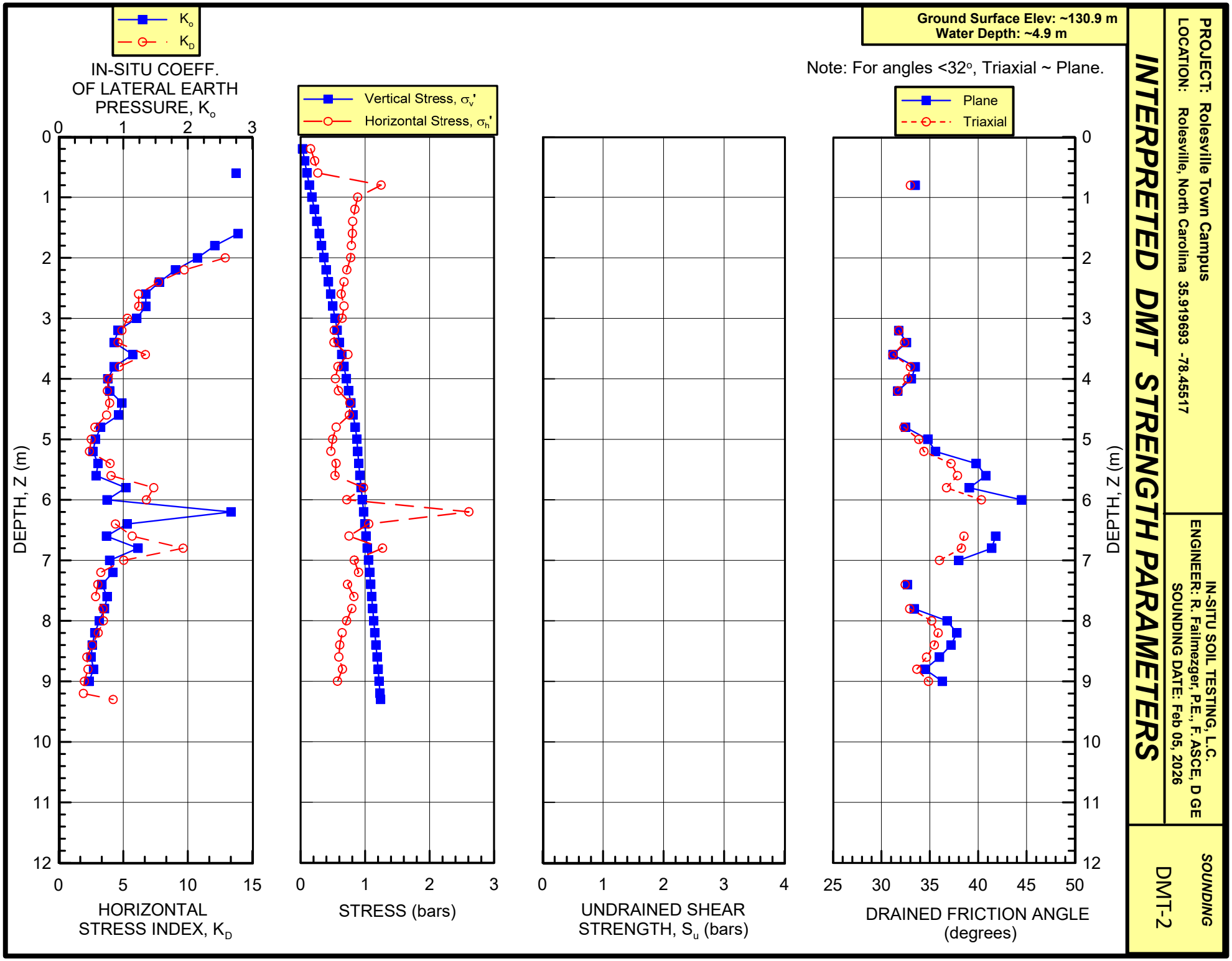
PROJECT: Rolesville Town Campus
LOCATION: Rolesville, North Carolina 35.919693 -78.45517

IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger
SOUNDING DATE: Feb 05, 2026

DMT-2

SOUNDING




Ground Surface Elev: ~130.9 m
Water Depth: ~4.9 m
Note: For angles <32°, Triaxial ~ Plane.
INTERPRETED DMT STRENGTH PARAMETERS
PROJECT: Rolesville Town Campus
LOCATION: Rolesville, North Carolina 35.919693 -78.45517
IN-SITU SOIL TESTING, L.C.
ENGINEER: R. Failmezger, P.E., F.ASCE, D GE
SOUNDING DATE: Feb 05, 2026
SOUNDING
DMT-2
IN-SITU COEFF. OF LATERAL EARTH PRESSURE, K_o
K_o
K_D
DEPTH, Z (m)
HORIZONTAL STRESS INDEX, K_D
Vertical Stress, σ_v'
Horizontal Stress, σ_h'
STRESS (bars)
UNDRAINED SHEAR STRENGTH, S_u (bars)
Plane
Triaxial
DRAINED FRICTION ANGLE (degrees)

Seismic Site Class Determination

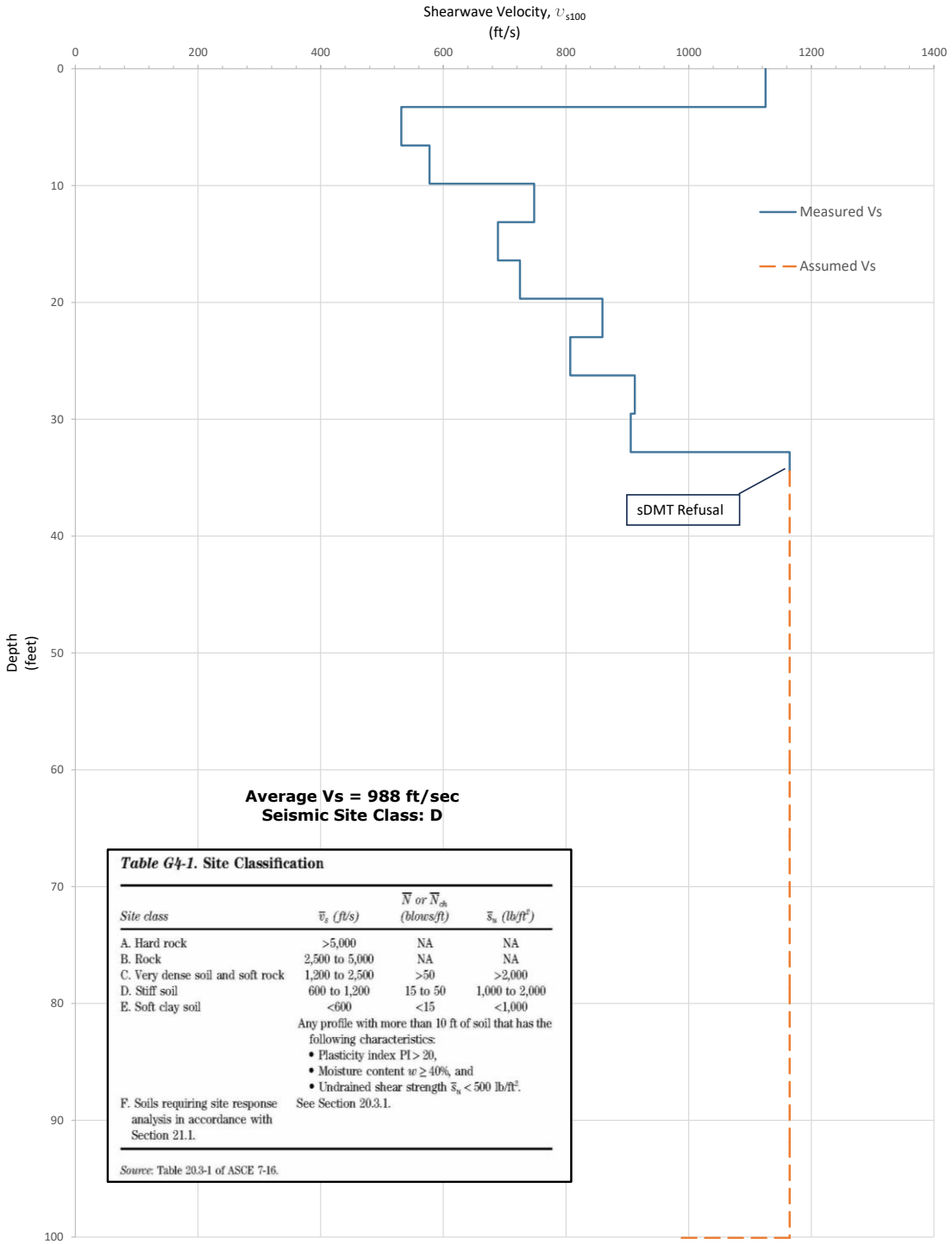
Shearwave Velocity Method, υ_s (ASCE 7-16)

Rolesville Town Campus (Police and Fire Stations)

Rolesville, North Carolina

SE&T Project No.: 25-1298

Test No. sDMT-1



Average Vs = 988 ft/sec
Seismic Site Class: D

***Table G4-1.* Site Classification**

Site class	$\overline{v}_s$ *(ft/s)*	$\overline{N}$ *or* $\overline{N}_{ch}$ *(blows/ft)*	$\overline{s}_u$ *(lb/ft²)*
A. Hard rock	>5,000	NA	NA
B. Rock	2,500 to 5,000	NA	NA
C. Very dense soil and soft rock	1,200 to 2,500	>50	>2,000
D. Stiff soil	600 to 1,200	15 to 50	1,000 to 2,000
E. Soft clay soil	<600	<15	<1,000
	Any profile with more than 10 ft of soil that has the following characteristics: • Plasticity index PI > 20, • Moisture content $w \geq 40\%$, and • Undrained shear strength $\overline{s}_u < 500$ lb/ft².		
F. Soils requiring site response analysis in accordance with Section 21.1.	See Section 20.3.1.		

Source: Table 20.3-1 of ASCE 7-16.

SOUTHERN ENGINEERING

Studio Prof. Marchetti

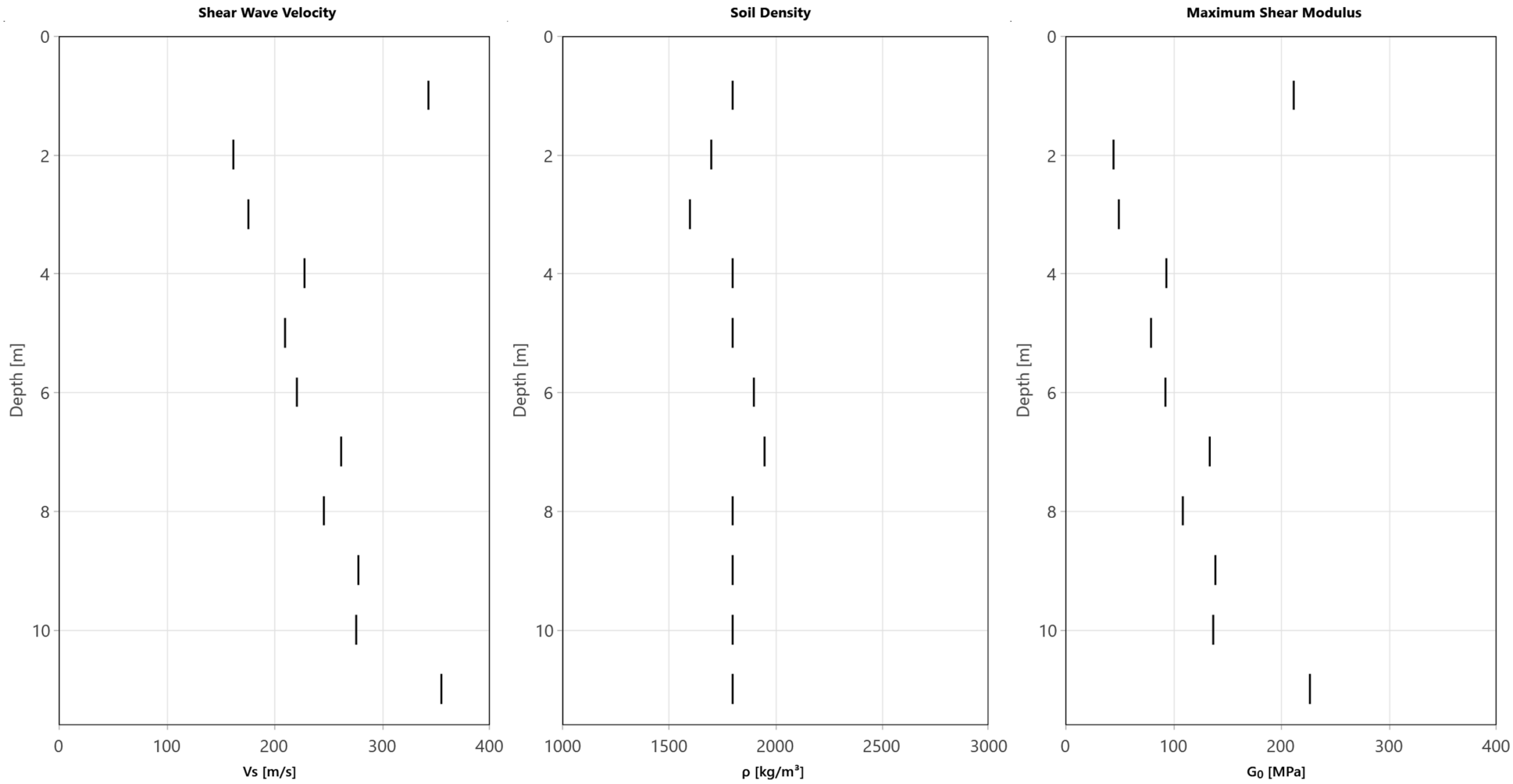
Via Bracciano 38
00189, Roma
Italia
www.marchetti-dmt.it

DMT-1

Project:

2/5/2026

S-wave



Studio Prof. Marchetti

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DMT-1

S-wave

2/5/2026



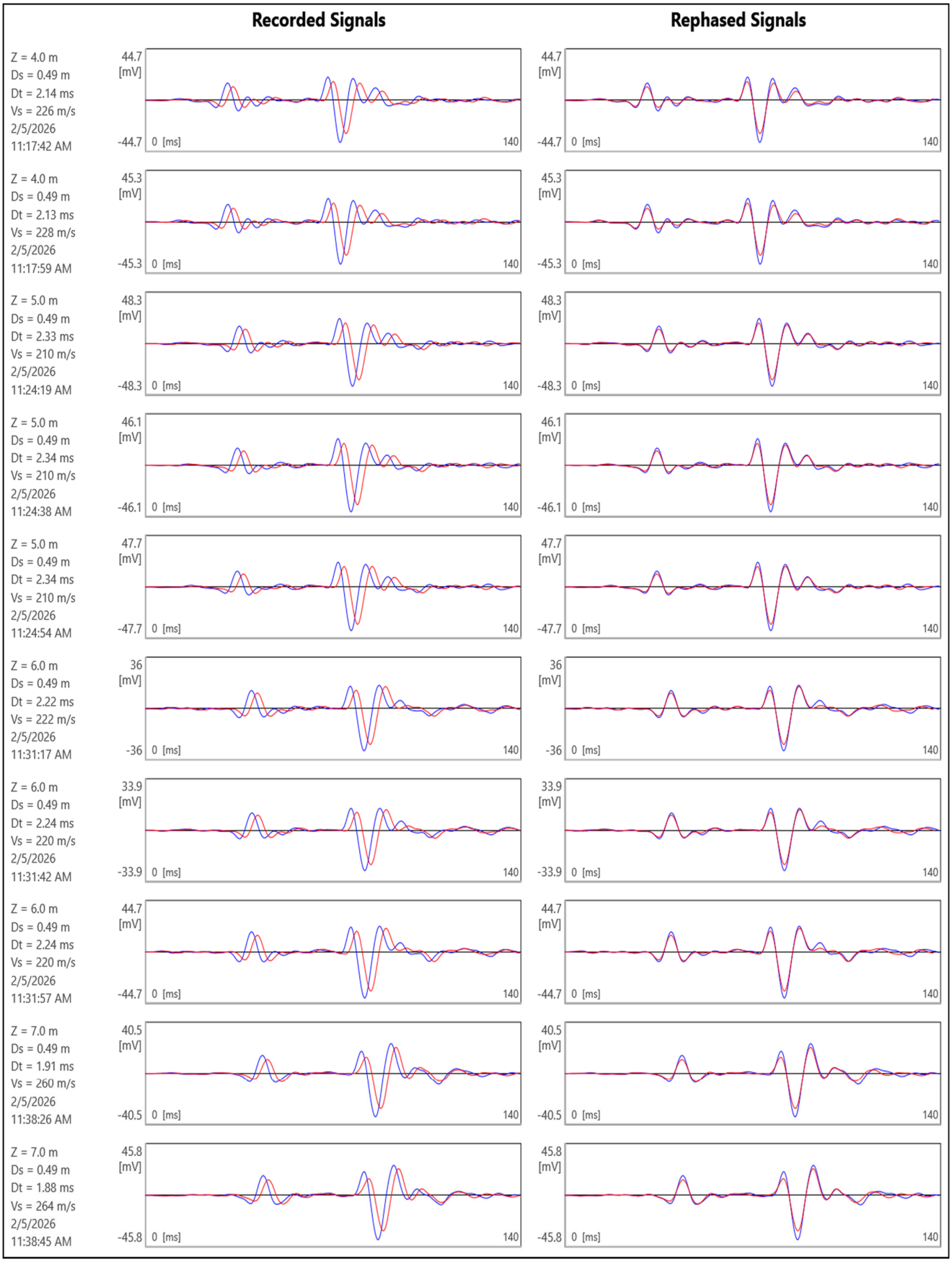
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Italia
www.marchetti-dmt.it

DMT-1

S-wave

2/5/2026



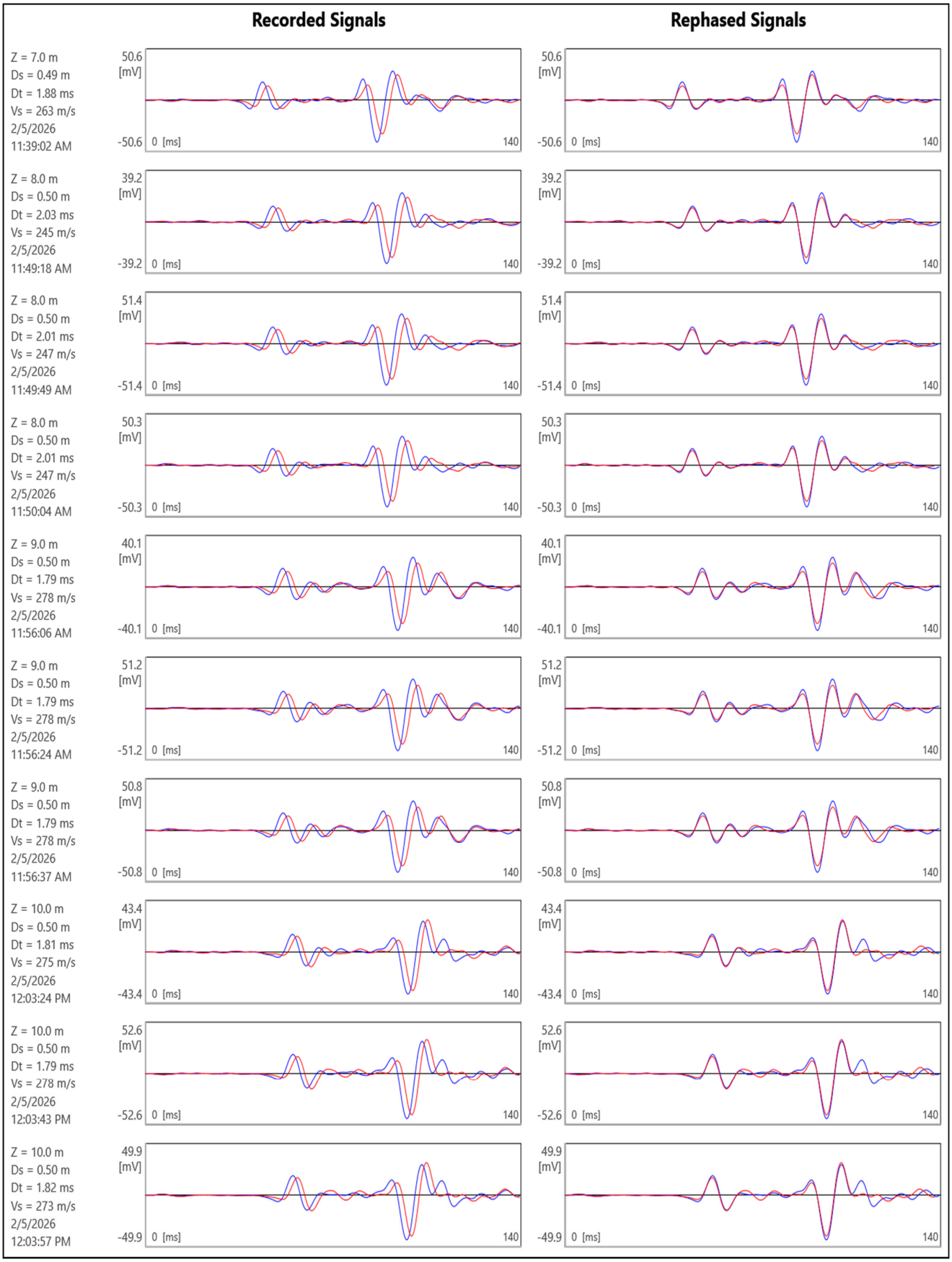
Studio Prof. Marchetti

Via Bracciano 38
00189, Roma
Italia
www.marchetti-dmt.it

DMT-1

S-wave

2/5/2026



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www.marchetti-dmt.it

DMT-1

S-wave

2/5/2026

Project:



APPENDIX C

LAB TEST RESULTS

LABORATORY TESTING SUMMARY

SOUTHERN ENGINEERING
Consulting | Testing | Special Inspections

Project Name: Roseville Town Campus
Client: Town of Rolesville
Project Number: 25-1298
January 19, 2026

SAMPLE IDENTIFICATION			WATER	LIQUID	PLASTIC	PLASTICITY	PERCENT	COMPACTION	USCS
LOCATION	SAMPLE	DEPTH, ft	CONTENT, %	LIMIT	LIMIT	INDEX	FINER NO. 200	MDD, pcf / OPT, %	CLASSIFICATION
B-13	(bulk)	1-5	36.0	77	37	40	60.8	96.4 / 24.1	MH
B-24	(bulk)	1-5	27.7	60	35	25	58.0	103.5 / 19.6	MH
B-1	S-1	1-2.5	21.8	-----	-----	-----	-----	-----	-----
B-1	S-2	3.5-5	41.4	-----	-----	-----	-----	-----	-----
B-2	S-1	1-2.5	24.8	-----	-----	-----	-----	-----	-----
B-2	S-2	3.5-5	36.8	-----	-----	-----	-----	-----	-----
B-3	S-1	1-2.5	26.7	61	33	28	64.8	-----	MH
B-3	S-2	3.5-5	31.0	-----	-----	-----	-----	-----	-----
B-3	S-3	6-7.5	34.4	-----	-----	-----	-----	-----	-----
B-3	S-4	8.5-10	41.2	-----	-----	-----	-----	-----	-----
B-3	S-6	18.5-20	40.8	-----	-----	-----	-----	-----	-----
B-3	S-8	28.5-30	30.0	-----	-----	-----	-----	-----	-----
B-9	S-1	1-2.5	25.8	65	39	26	58.8	-----	MH
B-9	S-2	3.5-5	28.9	-----	-----	-----	-----	-----	-----
B-9	S-3	6-7.5	31.7	-----	-----	-----	-----	-----	-----
B-9	S-4	8.5-10	39.2	-----	-----	-----	-----	-----	-----
B-9	S-5	13.5-15	39.1	-----	-----	-----	-----	-----	-----
B-9	S-6	18.5-20	37.6	-----	-----	-----	-----	-----	-----
B-11	S-1	1-2.5	24.4	-----	-----	-----	-----	-----	-----
B-11	S-2	3.5-5	32.6	-----	-----	-----	-----	-----	-----
B-11	S-3	6-7.5	29.2	-----	-----	-----	-----	-----	-----
B-12	S-2	3.5-5	32.8	-----	-----	-----	-----	-----	-----
B-15	S-1	1-2.5	35.3	90	46	44	73.8	-----	MH
B-24	S-1	1-2.5	26.2	-----	-----	-----	-----	-----	-----

Reviewed by: John Dailly
Laboratory Testing Supervisor

Reported results relate only to the identified sample tested.

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Southern Engineering and Testing PC 5400 Old Poole Road Raleigh, NC 27610
Telephone: 919-321-9407 www.southernengineeringpc.com

LABORATORY TESTING SUMMARY

SOUTHERN ENGINEERING
Consulting | Testing | Special Inspections

Project Name: Roseville Town Campus
Client: Town of Rolesville
Project Number: 25-1298
January 19, 2026

SAMPLE IDENTIFICATION			WATER	LIQUID	PLASTIC	PLASTICITY	PERCENT	COMPACTION	USCS
LOCATION	SAMPLE	DEPTH, ft	CONTENT, %	LIMIT	LIMIT	INDEX	FINER NO. 200	MDD, pcf / OPT, %	CLASSIFICATION
B-24	S-2	3.5-5	29.2	-----	-----	-----	-----	-----	-----
B-24	S-3	6-7.5	26.6	-----	-----	-----	-----	-----	-----
B-24	S-4	8.5-10	30.8	-----	-----	-----	-----	-----	-----
B-24	S-6	18.5-20	27.7	-----	-----	-----	-----	-----	-----
B-25	S-1	1-2.5	29.9	70	42	28	77.7	-----	MH
B-25	S-2	3.5-5	25.0	-----	-----	-----	-----	-----	-----
B-25	S-3	6-7.5	28.8	-----	-----	-----	-----	-----	-----
B-25	S-4	8.5-10	28.9	-----	-----	-----	-----	-----	-----
B-26	S-2	3.5-5	26.5	-----	-----	-----	-----	-----	-----
B-27	S-1	1-2.5	23.6	-----	-----	-----	-----	-----	-----
B-28	S-1	1-2.5	36.0	-----	-----	-----	-----	-----	-----
B-28	S-2	3.5-5	32.7	-----	-----	-----	-----	-----	-----
B-28	S-3	6-7.5	33.6	-----	-----	-----	-----	-----	-----
B-28	S-4	8.5-10	27.5	-----	-----	-----	-----	-----	-----
B-29	S-1	1-2.5	26.6	-----	-----	-----	-----	-----	-----
B-29	S-2	3.5-5	25.6	-----	-----	-----	-----	-----	-----
B-29	S-3	6-7.5	30.3	-----	-----	-----	-----	-----	-----
B-29	S-4	8.5-10	30.6	-----	-----	-----	-----	-----	-----
B-34	S-1	1-2.5	29.5	-----	-----	-----	-----	-----	-----
B-34	S-2	3.5-5	37.8	-----	-----	-----	-----	-----	-----
B-34	S-3	6-7.5	42.4	-----	-----	-----	-----	-----	-----
B-34	S-4	8.5-10	44.1	-----	-----	-----	-----	-----	-----

Reviewed by: John Dailly
Laboratory Testing Supervisor

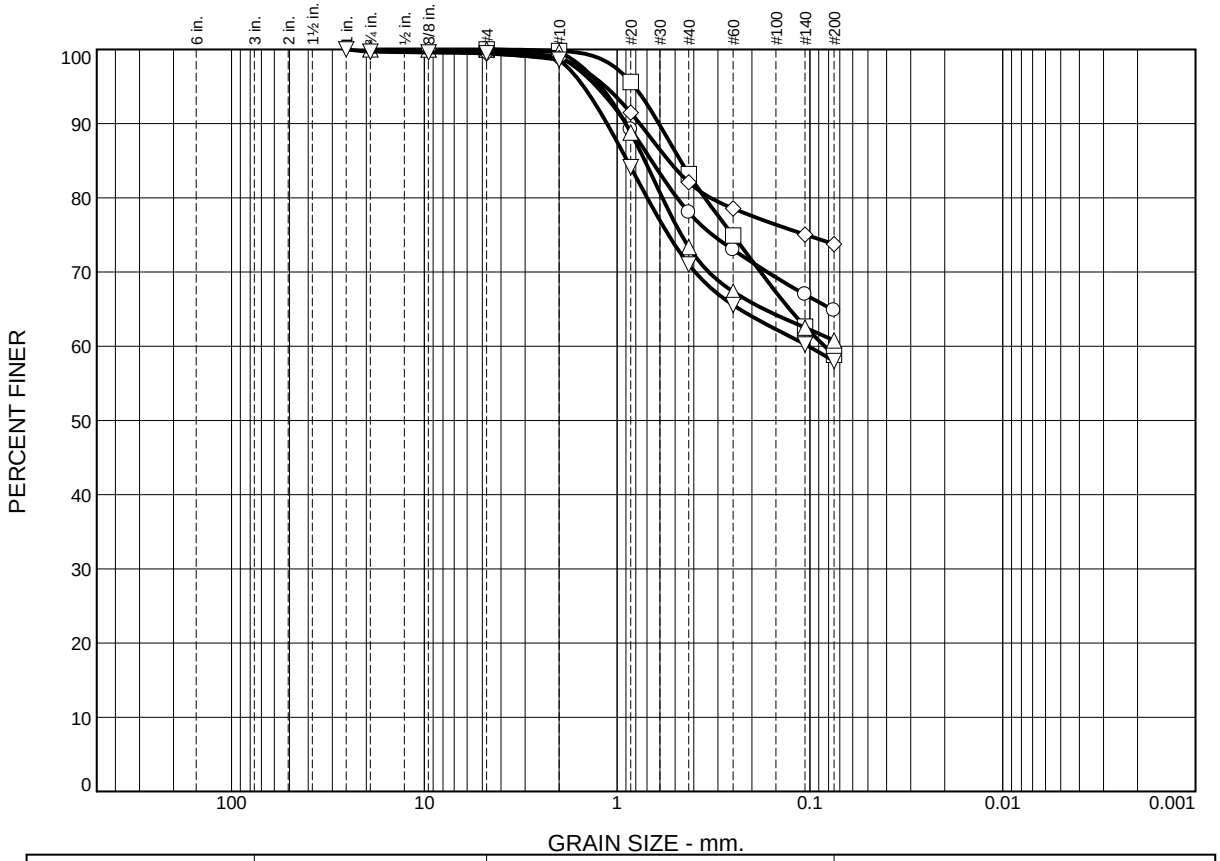
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Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	1.0	21.0	13.2	64.8	
□	0.0	0.0	0.0	0.2	16.6	24.4	58.8	
△	0.0	0.0	0.0	0.4	26.2	12.6	60.8	
◇	0.0	0.0	0.5	0.7	16.7	8.3	73.8	
▽	0.0	0.3	0.2	0.9	27.6	13.0	58.0	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-3	S-1	1-2.5'	sandy elastic silt	MH
□	B-9	S-1	1-2.5'	sandy elastic silt	MH
△	B-13	(bulk)	1-5'	sandy elastic silt	MH
◇	B-15	S-1	1-2.5'	elastic silt with sand	MH
▽	B-24	(bulk)	1-5'	sandy elastic silt	MH

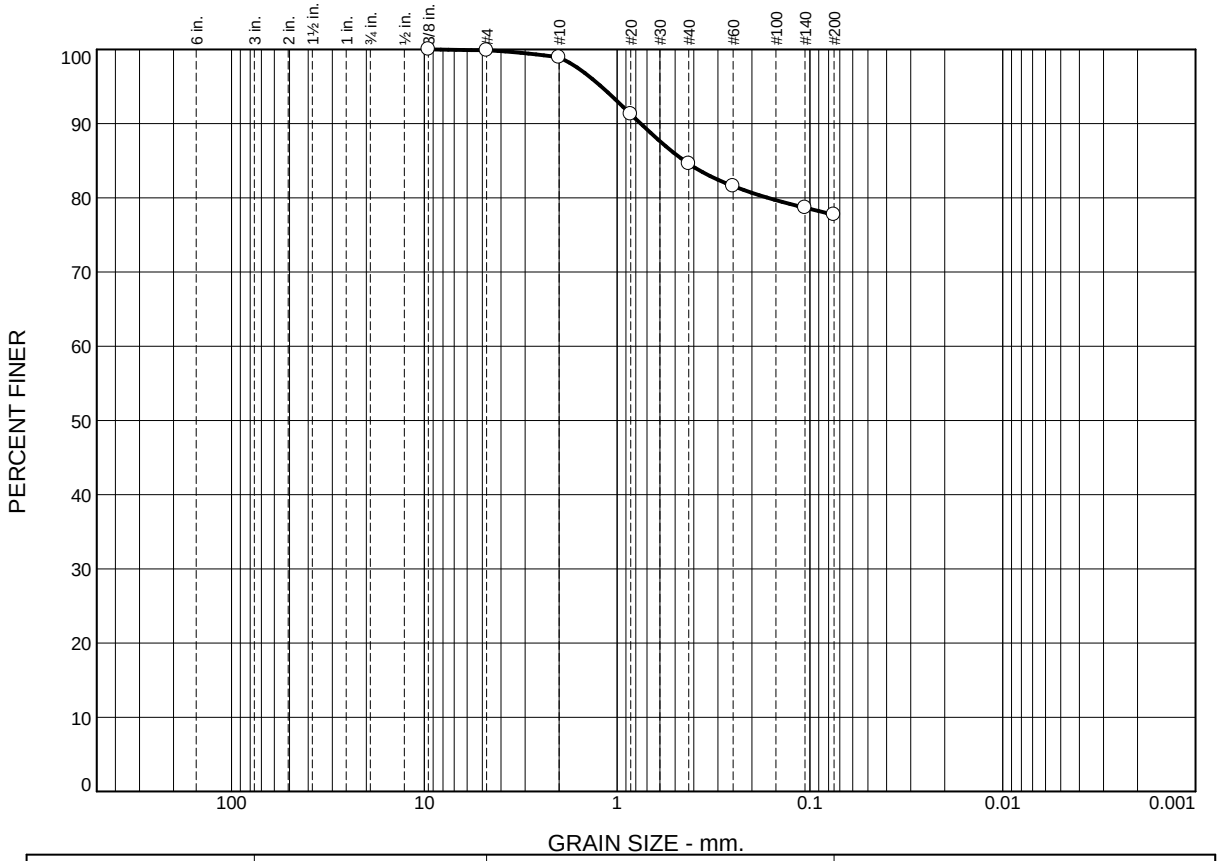
SOUTHERN ENGINEERING

Client: Town of Rolesville
Project: Rolesville Town Campus
Project No.: 25-1298

Checked By: John Dailly

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Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.1	1.0	14.3	6.9	77.7	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	B-25	S-1	1-2.5'	elastic silt with sand	MH

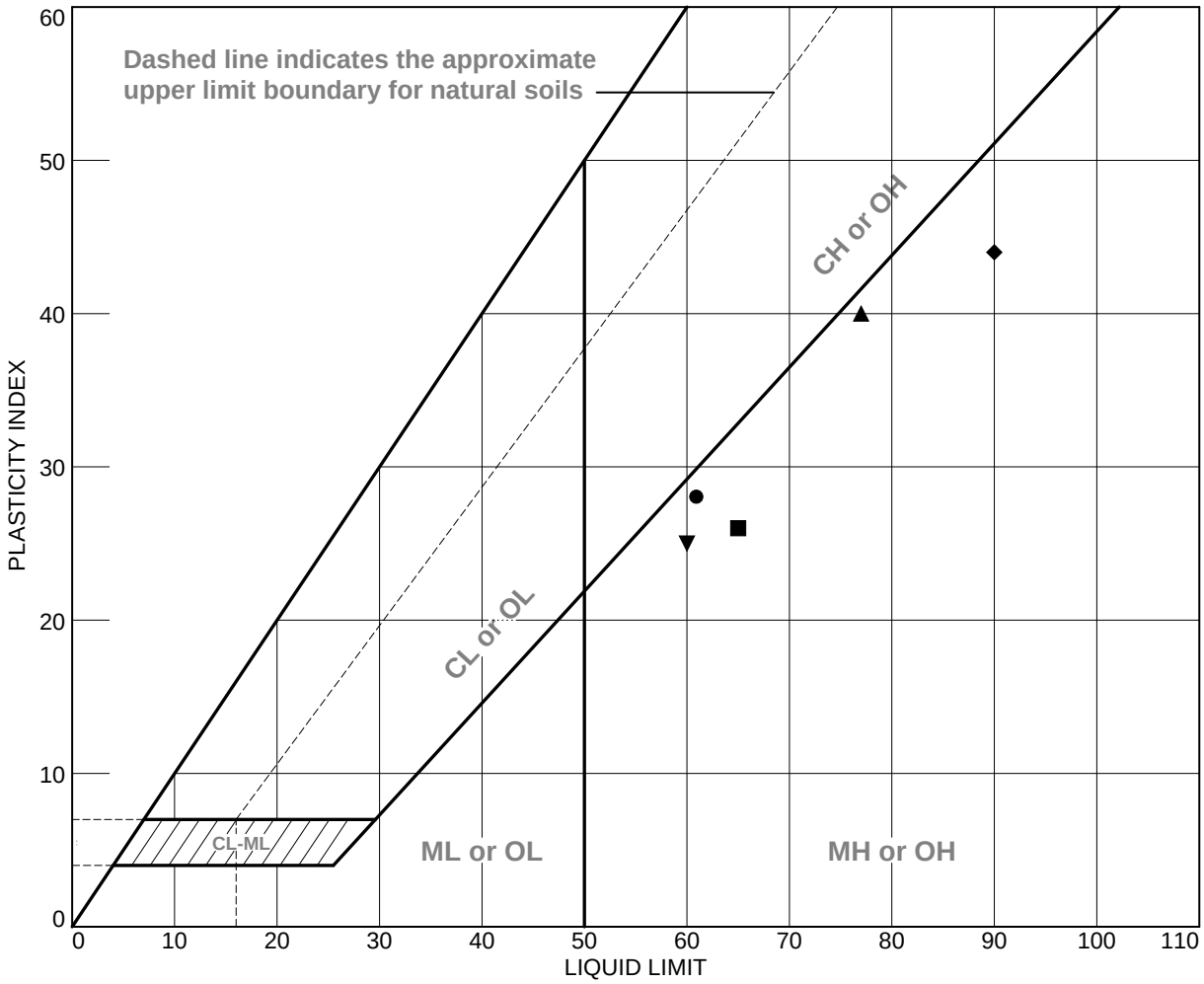
SOUTHERN ENGINEERING

Client: Town of Rolesville
Project: Rolesville Town Campus
Project No.: 25-1298

Checked By: John Dailly

Reported results relate only to the identified sample tested. This report shall not be reproduced, except in full without prior written approval of Southern Engineering.

LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-3	S-1	1-2.5'	26.7	33	61	28	MH
■	B-9	S-1	1-2.5'	25.8	39	65	26	MH
▲	B-13	(bulk)	1-5'	36.0	37	77	40	MH
◆	B-15	S-1	1-2.5'	35.3	46	90	44	MH
▼	B-24	(bulk)	1-5'	27.7	35	60	25	MH

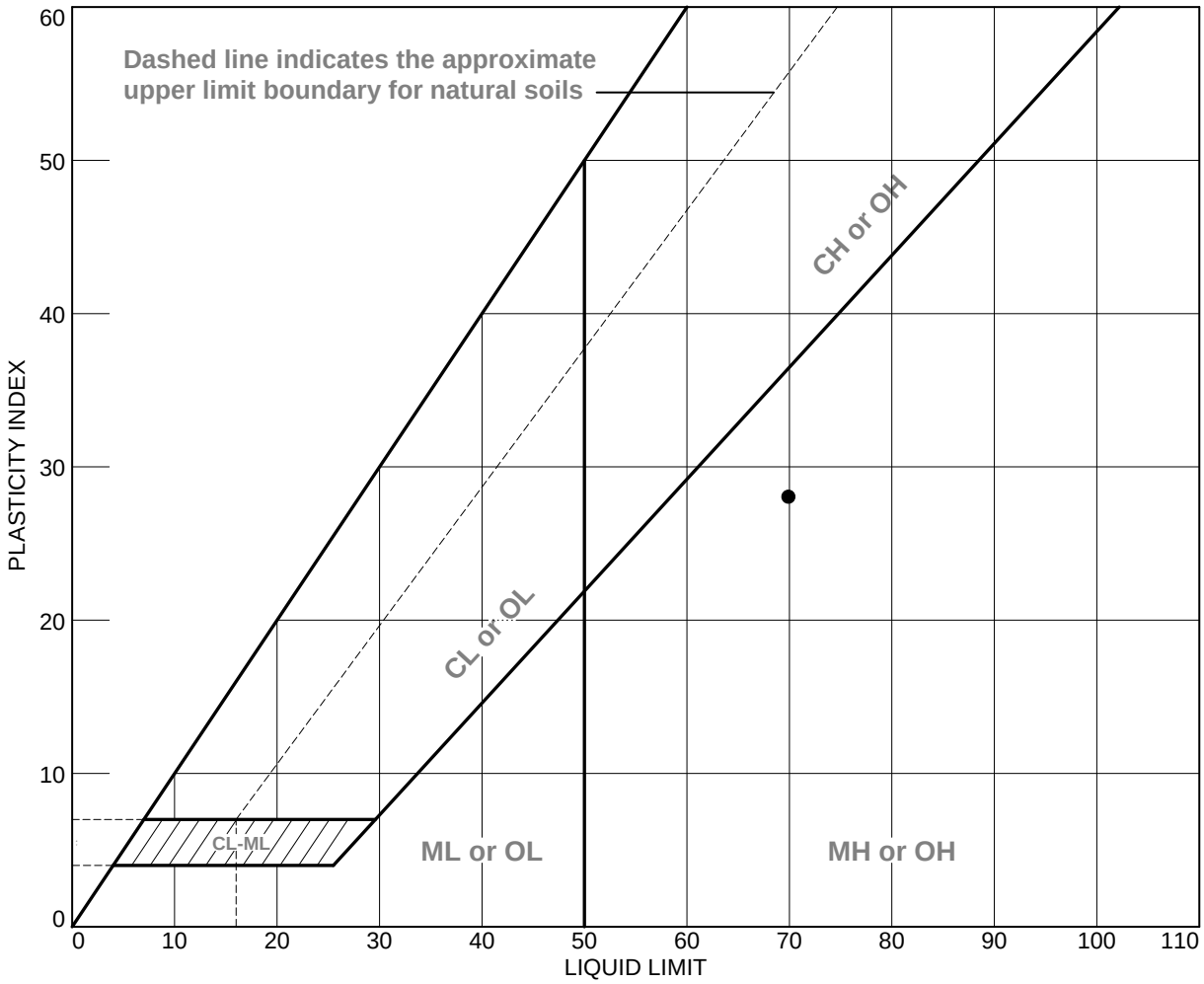
SOUTHERN ENGINEERING

Client: Town of Rolesville
Project: Rolesville Town Campus

Project No.: 25-1298

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LIQUID AND PLASTIC LIMITS TEST REPORT ASTM D4318



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	B-25	S-1	1-2.5'	29.9	42	70	28	MH

SOUTHERN ENGINEERING

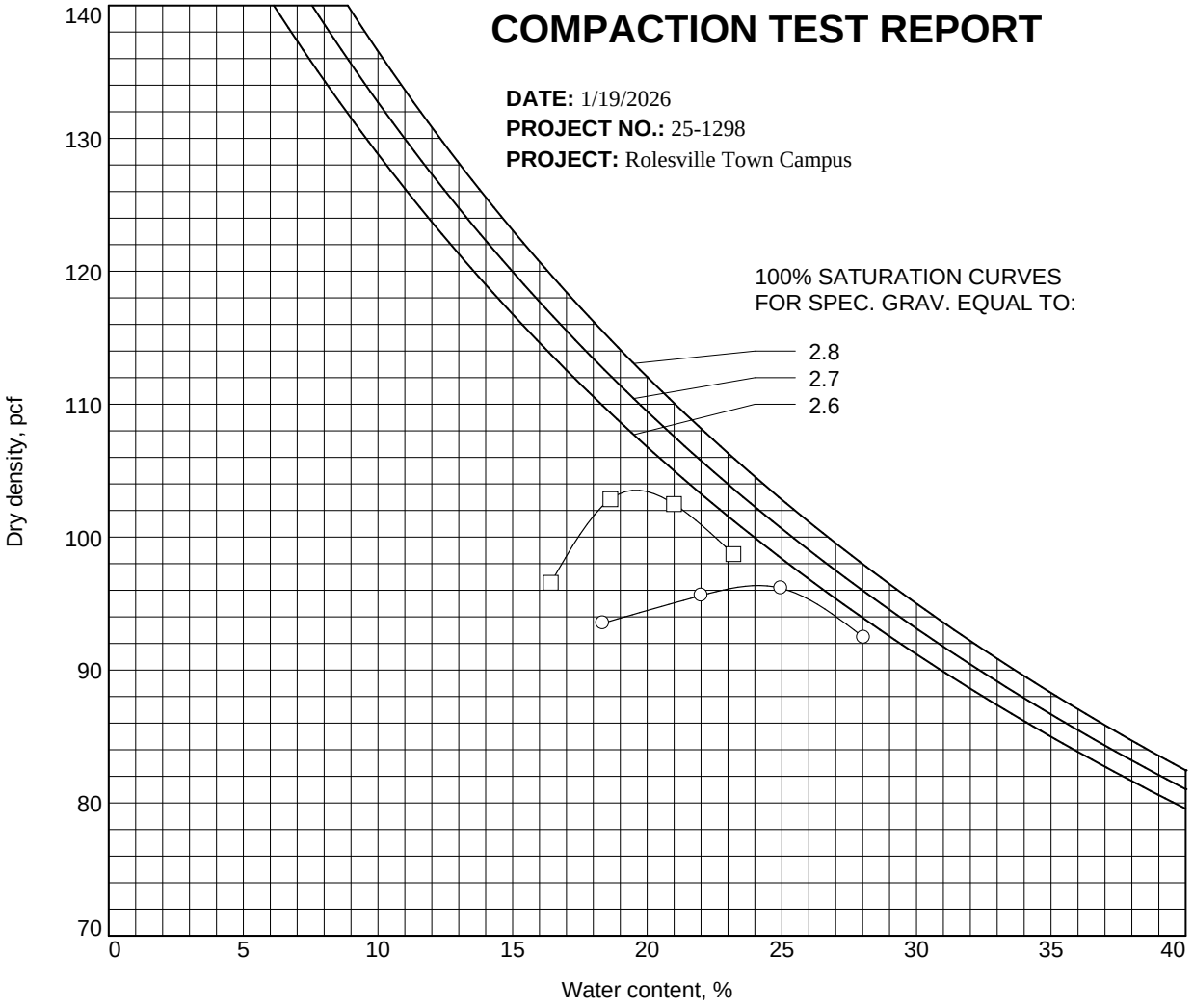
Client: Town of Rolesville
Project: Rolesville Town Campus

Project No.: 25-1298

Reported results relate only to the identified sample tested. This report shall not be reproduced, except in full without prior written approval of Southern Engineering.

COMPACTION TEST REPORT

DATE: 1/19/2026
PROJECT NO.: 25-1298
PROJECT: Rolesville Town Campus



	No.	LOCATION AND DESCRIPTION	TEST SPECIFICATION
○		**Source:** B-13 **Depth:** 1-5' **Sample No.:** (bulk) sandy elastic silt	ASTM D 698 Method A Standard
□		**Source:** B-24 **Depth:** 1-5' **Sample No.:** (bulk) sandy elastic silt	ASTM D 698 Method A Standard

	No.	USCS	LL	PI	NAT. MOIST.	OVERSIZE	%< No.200	MAX. DRY DEN.	OPT. MOIST.
○		MH	77	40	36.0	%>#4=0.0	60.8 %	96.4	24.1 %
□		MH	60	25	27.7	%>#4=0.5	58.0 %	103.5	19.6 %

Southern Engineering

Checked By: John Dailly

APPENDIX D

SITE PHOTOGRAPHS



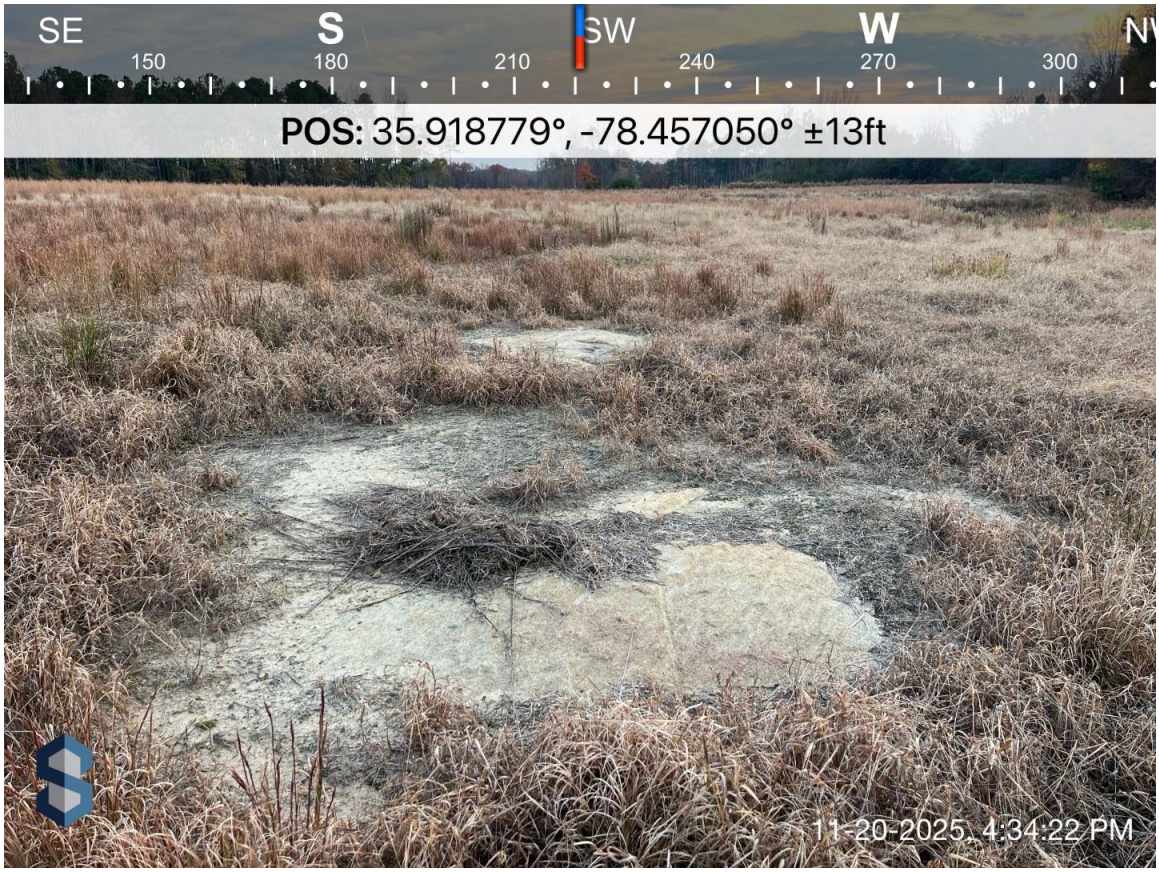
Photograph 2: View looking southwest from the northeast corner (highest elevation).



Photograph 1: Burned house along E. Young Street.



Photograph 4: Rock outcrops in the drainage feature on the west side of site.



Photograph 3: Rock outcrop in the field in western portion of the site.



Photograph 6: View looking west from the southeast corner of the property.



Photograph 5: View looking east from far west side of site.



APPENDIX E

SHWT REPORT

PIEDMONT ENVIRONMENTAL ASSOCIATES, P.A.

January 16, 2025 Project # 7394

Southern Engineering
c/o: Mr. Don Brown
5400 Old Poole Road
Raleigh, NC 27610

This report details the findings of a seasonally high-water table evaluation at the Long Melford Drive site, Rolesville, NC. Your office gave the location of the proposed storm water control measure (SCM). G. Christopher Murray, Licensed Soil Scientist #1284, conducted the evaluation in January, 2026. The results were as follows:

Seasonally High-Water Table Soil Borings
A soil boring was conducted at the location specified on the attached map, and the depth to the seasonally high-water table (SHWT) was determined by observing soil indicators, also known as redoximorphic features. Regulations require the bottom to the device to be 2 feet above the seasonally high-water table.

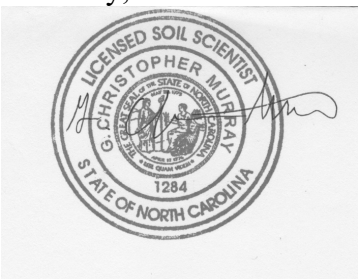
B-38 (N 789565.03, E 2160490.18)
Redoximorphic features were observed from 30 inches below the ground surface to the cessation of this boring at 8 feet/96 inches below ground surface. The surveyed elevation at this location was 415.58'.

B-39 (N 789489.64, E 2160355.46)
Redoximorphic features were observed from 36 inches below the ground surface to the cessation of this boring at 5 feet/60 inches below ground surface. The surveyed elevation at this location was 415.00'.

Boring ID	SHWT Depth (inches)	SHWT Elevation (feet)
B-38	30"-96"	413.08-407.58
B-39	36"-60"	412.00-410.00

Piedmont Environmental Associates, PA is pleased to perform this work for you. If you have any questions, please feel free to call (336) 662-5487.

Sincerely,



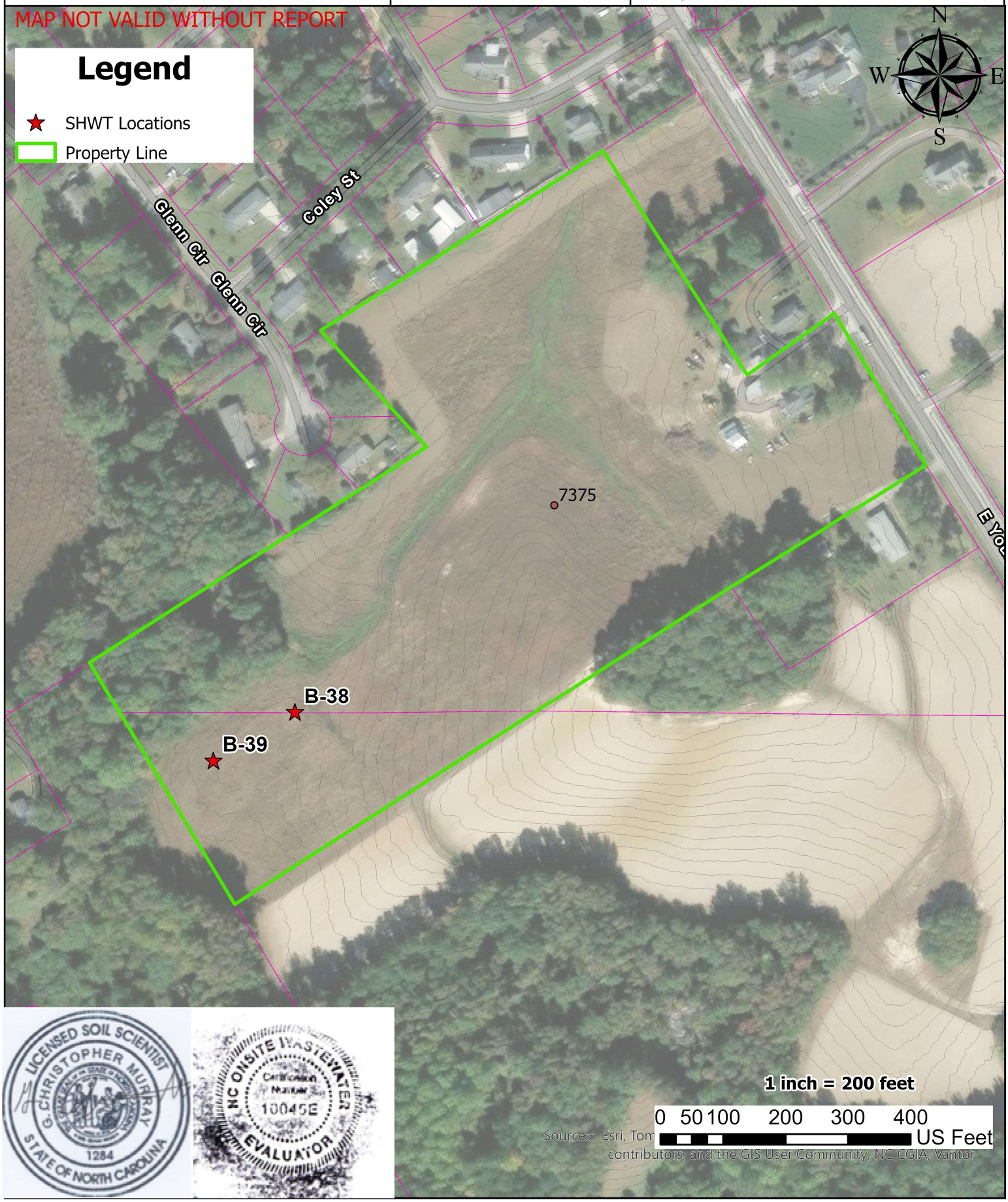
G. Christopher Murray
N.C. Licensed Soil Scientist #1284

PIEDMONT ENVIRONMENTAL ASSOCIATES, P.A.

SHWT Determination- Rolesville SHWT

216 S. Swing Rd. Suite 1
Greensboro, NC 27409
piedmontsoil.com

Job# 7375
Date:
Client: Southern Engineering
County: Wake



LICENSED SOIL SCIENTIST
G. CHRISTOPHER MURRAY
1284
STATE OF NORTH CAROLINA

NC ONSITE WASTEWATER
Certification Number
10045E
EVALUATOR

APPENDIX F

GBA CIRCULAR:
"IMPORTANT INFORMATION ABOUT THIS GEOTECHNICAL ENGINEERING REPORT"

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

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